Australian Government

Productivity Commission

Regulation of Australian Agriculture

Productivity Commission Draft Report

July 2016

This is a draft report prepared for further public consultation and input. The Commission will finalise its report after these processes have taken place.

© Commonwealth of Australia 2016

Except for the Commonwealth Coat of Arms and content supplied by third parties, this copyright work is licensed under a Creative Commons Attribution 3.0 Australia licence. To view a copy of this licence, visit http://creativecommons.org/licenses/by/3.0/au. In essence, you are free to copy, communicate and adapt the work, as long as you attribute the work to the Productivity Commission (but not in any way that suggests the Commission endorses you or your use) and abide by the other licence terms.

Use of the Commonwealth Coat of Arms

For terms of use of the Coat of Arms visit the 'It's an Honour' website: http://www.itsanhonour.gov.au

Third party copyright

Wherever a third party holds copyright in this material, the copyright remains with that party. Their permission may be required to use the material, please contact them directly.

Attribution

This work should be attributed as follows, *Source: Productivity Commission, Regulation of Australian Agriculture, Draft Report*.

If you have adapted, modified or transformed this work in anyway, please use the following, *Source: based on Productivity Commission data, Regulation of Australian Agriculture, Draft Report*.

An appropriate reference for this publication is:

Productivity Commission 2016, *Regulation of Australian Agriculture*, Draft Report, Canberra.

Publications enquiries

Media and Publications, phone: (03) 9653 2244 or email: maps@pc.gov.au

The Productivity Commission

The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

Further information on the Productivity Commission can be obtained from the Commission's website (www.pc.gov.au).

Opportunity for further comment

You are invited to examine this draft and comment on it by written submission to the Productivity Commission, preferably in electronic format, by **Thursday 18 August 2016**. Further information on how to provide a submission is included on the inquiry website http://www.pc.gov.au/inquiries/current/agriculture.

The final report will be prepared after further submissions have been received and public hearings have been held, and will be forwarded to the Australian Government in November 2015. Under the *Productivity Commission Act 1998* (Cwlth), the Government is required to table the report in each House of the Parliament within 25 sitting days of receipt.

Public hearing dates and venues

Location	*Date*	*Venue*
Perth, WA	16 August 2016	Mantra on Murray 305 Murray Street, Perth
Melbourne, Vic	17 August 2016	Productivity Commission Level 12, 530 Collins St, Melbourne
Wagga Wagga, NSW	18 August 2016	Mercure Wagga Wagga 1 Morgan St, Wagga Wagga
Sydney, NSW	19 August 2016	Adina Apartment Hotel 359 Crown St, Surry Hills
Canberra, ACT	22 August 2016	Productivity Commission Level 2, 15 Moore St, Canberra
Toowoomba, Qld	23 August 2016	Burke & Wills Hotel 554 Ruthven Street, Toowoomba
Brisbane, Qld	24 August 2016	Rendezvous Hotel Brisbane on George 103 George Street, Brisbane
Townsville, Qld	25 August 2016	Rydges Southbank Townsville 23 Palmer St, Townsville

Commissioners

For the purposes of this inquiry and draft report, in accordance with section 40 of the *Productivity Commission Act 1998* (Cwlth) the powers of the Productivity Commission have been exercised by:

Paul Lindwall	Presiding Commissioner
Ken Baxter	Commissioner

Terms of reference

Inquiry into regulation of Australian agricultural sector

I, Scott Morrison, Treasurer, pursuant to Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby request that the Productivity Commission undertake an inquiry into the regulatory burden imposed on Australian farm businesses.

Background

The Australian Government has identified the agriculture sector as one of the five pillars of the economy. It is promoting the economic potential of the sector by removing unnecessary regulatory burdens and promoting improved productivity and global competitiveness.

The Australian Government's deregulation agenda has focussed on reducing Commonwealth red tape. As part of its deregulation agenda, the Government is implementing reforms in agricultural and veterinary chemicals, biosecurity and export certification. However, there is an opportunity for better national outcomes for the agriculture sector by considering regulation at all levels of government. This is particularly applicable in the areas of transport, environmental protection, native vegetation management, land tenure, animal welfare and food safety in which the states and territories have significant responsibility.

While regulation targets valid objectives, such as protecting consumers from unsafe food, protecting the environment or supporting the export of goods, poorly implemented and administered regulation and the cumulative impact of regulation can have adverse effects on fan-n businesses. It can unnecessarily restrict farm management decisions and reduce investment.

Inconsistent and overlapping regulations between jurisdictions can also create adverse effects and raise costs for faun businesses.

Scope of the inquiry

The inquiry will focus on regulation with a material impact on domestic and international competitiveness of farm businesses and the productivity of Australian agriculture.

The inquiry will define priority areas for removing or reducing unnecessary regulatory burdens where doing so will/can contribute to improved productivity for farm businesses as well as the wider economy.

The inquiry will also review regulation of farm businesses to identify unnecessary restrictions on competition.

While focussed on the impact of regulation on farm businesses, the inquiry should also consider the material impact arising from regulation imposed along the supply chain such as regulations introduced to meet the requirements of international markets.

Consistent with its legislative remit, the Commission is to have particular regard to:

- areas of regulation that directly affect farm businesses, including those identified as areas of concern through the white papers on agricultural competitiveness and northern Australia. This includes regulatory arrangements affecting access to new technologies, investment opportunities, land tenure, relevant environmental protection and native vegetation laws, animal welfare and the Exporter Supply Chain Assurance System
- areas where there is greatest scope to reduce unnecessary regulatory burden and pursue regulatory objectives in more efficient (least cost) ways
- whether the current level at which matters are regulated (national, State and local) is appropriate and whether there is scope for better coordinated action across governments to reduce unnecessary overlap
- whether Australia's farm export competitiveness can be improved by minimising duplication between domestic regulation and importing country requirements
- relevant regulatory approaches adopted in other countries.

Specific requirements

In undertaking the inquiry, the Commission should:

- identify specific areas of regulation that are unnecessarily burdensome, complex or redundant
- identify priority areas for regulatory reform
- provide recommendations to alleviate regulatory burden identified.
- For the purposes of this inquiry, the regulatory issues affecting:
- marine fisheries and aquaculture industries will be investigated as part of a separate Productivity Commission inquiry into the Regulation of Australian Marine Fisheries and Aquaculture Sectors.

Process

The Commission is to advertise nationally, consult with key interest groups and affected parties, hold hearings, invite public submissions and release a draft report to the public.

To expedite the review the Commission should consider relevant submissions to the white papers on agricultural competitiveness and Northern Australia and other relevant material in the public domain.

The final report should be provided within nine months of the receipt of these Terms of Reference.

S. MORRISON

Treasurer

[Received 20 November 2015]

Contents

Opportunity for further comment iii

Terms of reference iv

Acknowledgements x

Abbreviations xi

Overview 1

Draft recommendations, findings and information requests 31

1 About this inquiry 43

1.1 What has the Commission been asked to do? 45

1.2 Our approach to reviewing regulation 46

1.3 There are regulations at every stage of the agricultural supply chain 49

1.4 Benefits and costs of regulation are acknowledged 51

1.5 Conduct of the inquiry 55

2 Land use regulation 57

2.1 The role of government in land use 59

2.2 How is land use regulated? 60

2.3 Agriculture on Crown land 62

2.4 Conflicts between farming and residential land use 71

2.5 Conflicts over land access for resource exploration and extraction 77

2.6 Planning, zoning and development assessment 82

3 Environmental regulations 91

3.1 Why are governments involved in environmental protection? 92

3.2 Environmental regulations: the current state of play 94

3.3 The effect of environmental regulations on farm businesses 103

3.4 Addressing issues in environmental regulations 124

4 On-farm regulation of water 143
4.1 Water and agriculture 143
4.2 Regulating farm access to water 149
4.3 Regulating farm use of water 164
4.4 Regulating farm disposal of water 164
4.5 Water reporting 167
5 Regulation of farm animal welfare 171
5.1 The concept of animal welfare 172
5.2 A role for government in farm animal welfare? 174
5.3 Australia's animal welfare system 178
5.4 How are farm animal welfare standards set? 181
5.5 Improving the effectiveness of farm animal welfare regulation 196
5.6 Live export regulation 211
6 Regulation of technologies and agricultural and veterinary chemicals 223
6.1 Regulating the evolving world of agricultural technologies 225
6.2 Access to agricultural and veterinary chemicals 245
6.3 Is there scope for more significant reform? 259
7 Biosecurity 261
7.1 Australia's biosecurity arrangements 262
7.2 Why are governments involved in biosecurity? 269
7.3 Benefits and costs of biosecurity 270
7.4 Regulatory issues raised about biosecurity 273
8 Transport 293
8.1 Heavy vehicles 294
8.2 Rail 323
8.3 Ports 326
8.4 Coastal shipping 329
8.5 Biofuel support programs 334

9 Food regulation **339**
9.1 Rationale for food regulation 340
9.2 Food regulation in Australia 343
9.3 Regulation of food labelling 346
9.4 Regulation of food safety in the production process 367
10 Labour regulation **379**
10.1 Distinctive features of labour markets 381
10.2 Access to overseas workers 382
10.3 Workplace relations 397
10.4 Work health and safety 400
11 Competition regulation **409**
11.1 Statutory marketing 411
11.2 Competition law 426
11.3 Industry codes of conduct 434
12 Foreign investment in agriculture **439**
12.1 About Australia's foreign investment framework 441
12.2 The importance of foreign investment to Australia 445
12.3 A closer look at the new foreign investment arrangements for agriculture 452
13 Export regulation **473**
13.1 Regulation of agricultural exports 474
13.2 The regulatory burden of export certification 476
14 The way forward **485**
14.1 The nature of the regulatory burden facing farmers 486
14.2 Systemic regulatory problems and inquiry themes 487
A Public consultation **499**
References **507**
The following appendixes are available online at www.pc.gov.au
B A brief history of statutory marketing in Australian agriculture
C Case studies: the burden of regulation on farm businesses
D Analysis of rice price premiums

Acknowledgements

The Commission is grateful to everyone who freely gave their time to discuss the very wide range of matters canvassed in the terms of reference, especially those who met with the Commission, participated in case studies and provided written submissions.

The Commissioners would like to express their appreciation to the staff who worked on the inquiry. The team was led by Rosalie McLachlan and included Lisa Chan, Imogen Curtis, Senna Eswaralingam, Cordelia Foo, Lisa Lee, Ana Markulev, Bonnie Nguyen, Marianna Olding, Rohan Nelson, Oliver Richards and Isfaaq Timol.

Abbreviations

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACL	Australian Consumer Law
AGMIN	Agriculture Ministers' Forum
agvet	agricultural and veterinary
APVMA	Australian Pesticides and Veterinary Medicines Authority
ASIC	Australian Securities and Investments Commission
ATO	Australian Tax Office
COAG	Council of Australian Governments
CoOL	Country-of-origin labelling
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAWR	Department of Agriculture and Water Resources
EPA	Environment Protection Authority or Agency
EPG	Ethanol Production Grants
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDA	United States Food and Drug Administration
FDI	Foreign direct investment
FIRB	Foreign Investment Review Board
FoFR	Australia and New Zealand Ministerial Forum on Food Regulation
FSANZ	Food Standards Australia New Zealand
GDP	Gross domestic product
GM	Genetically modified
GMO	Genetically modified organisms
HVNL	Heavy Vehicle National Law

ICA	Interstate certification assurance
IIO	Irrigation Infrastructure Operator
IGAB	Intergovernmental Agreement on Biosecurity
MDBA	Murray-Darling Basin Authority
NBC	National Biosecurity Committee
NEBRA	National Environmental Biosecurity Response Agreement
NFF	National Farmers' Federation
NHVR	National Heavy Vehicle Regulator
NPI	National Pollutant Inventory
NRM	National resource management
NZ	New Zealand
NWC	National Water Commission
NWI	National Water Initiative
OAW	Office of Animal Welfare
OBPR	Office of Best Practice Regulation
OECD	Organisation for Economic Co-operation and Development
OGTR	Office of the Gene Technology Regulator
OIE	World Organisation for Animal Health
PC	Productivity Commission
PIMC	Primary Industries Ministerial Council
RIA	Regulatory impact assessment
RIS	Regulation impact statement
RSRT	Road Safety Remuneration Tribunal
RSPCA	Royal Society for the Prevention of Cruelty to Animals
SDL	Sustainable Diversion Limit
SKU	Stock keeping unit
VICH	International Cooperation on Harmonisation of Technical Requirements for Veterinary Medicinal Products
WHO	World Health Organization
WHS	Work Health and Safety
WTO	World Trade Organization

OVERVIEW

Key points

- Farm businesses are subject to a vast and complex array of regulations. Regulations are in place at every stage of the supply chain — from land acquisition to marketing — and are applied by all levels of government. The number and complexity of regulations affecting farm businesses means that the cumulative burden of regulation on farmers is substantial.
- The need for regulation is not disputed by farm businesses. In fact, some regulations, such as biosecurity and food safety regulations, were highlighted as providing clear benefits to Australian farmers. Rather, Australian farmers want 'better' (or less burdensome) regulation.
- Some regulations lack a sound policy justification and should be removed. Examples include restrictions on the use of land held under pastoral lease arrangements, state bans on cultivating genetically modified crops, recent changes to tighten foreign investment review requirements for the agricultural sector, barriers to entry for foreign shipping providers, mandatory labelling of genetically modified foods, and statutory marketing legislation relating to rice in New South Wales and sugar in Queensland.
- Other regulations and regulatory systems need to be reformed so they can more fully achieve their objectives.
  - Native vegetation and biodiversity conservation regulations need fundamental change so that risks and impacts are considered at a relevant landscape-wide scale. Environmental regulatory decisions also need to take into account economic and social factors.
  - Animal welfare regulations seek to achieve welfare outcomes that (among other things) meet community expectations. However, little is known about these expectations.
  - The process for setting standards for farm animal welfare would be improved by applying scientific principles and evidence through the creation of a national, independent body responsible for building the evidence base on community expectations, as well as for developing national farm animal welfare standards.
  - The standard for the level of gluten allowed in foods labelled as 'gluten-free' needs review.
  - International evidence could be put to greater use in assessing agricultural and veterinary (agvet) chemicals, reducing the time and cost taken to grant registration.
- Inconsistent regulatory requirements across jurisdictions make it difficult for farmers to understand their obligations and add to the cost of doing business. A more consistent approach would improve outcomes in the areas of heavy vehicle regulation and road access, and the use of agvet chemicals.
- Governments could also reduce the regulatory burden on farm businesses by:
  - improving their consultation and engagement practices. There is scope to better support landholders to understand environmental regulations, and to reduce duplicative and unnecessary information gathering regarding water management by farm businesses
  - doing more to coordinate their actions, both between agencies and between governments
  - ensuring that good regulatory impact assessment processes are used as an analytical tool to support quality regulation making, not as a legitimising tool or compliance exercise.

Overview

The key task for this inquiry is to identify regulations that impose an unnecessary (and therefore avoidable) burden on farm businesses. And, where there are legitimate policy goals underlying the regulation, to look at whether there is scope to achieve the regulatory objectives in a more efficient way.

Why regulatory burden matters

Regulatory burden matters because it can weigh heavily on farm businesses and undermine the agricultural sector's productivity and competitiveness. Reducing regulatory burden, and improving the efficiency of the regulatory environment, is important for all sectors of the economy, but particularly for the agricultural sector given:

- its high dependence on international markets — around two-thirds of Australia's agricultural output is exported (with most producers being price takers in international markets)
- most Australian farms are small businesses, and regulatory burdens can have a significant and disproportionate impact on small businesses.

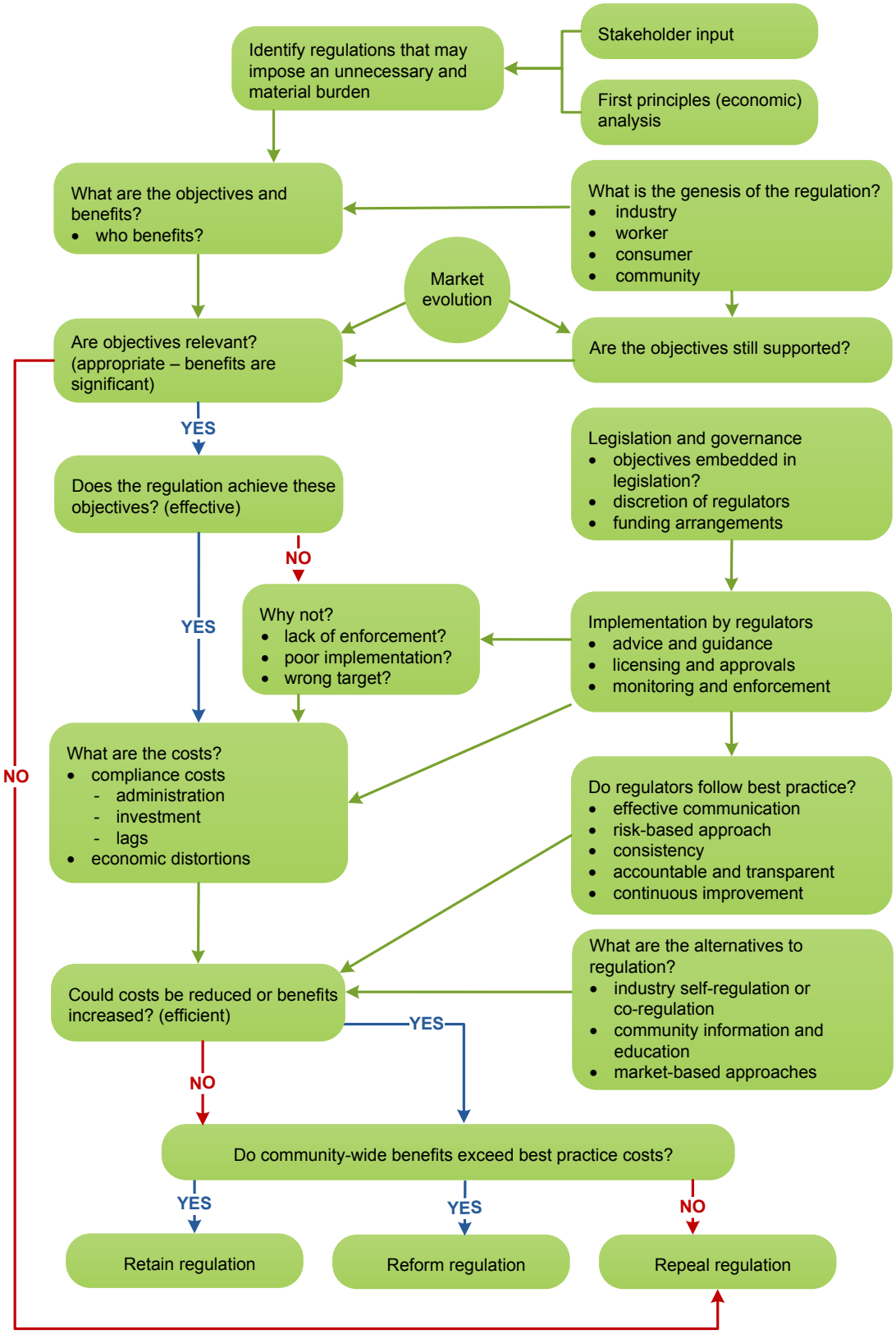
For farm businesses, reducing regulatory burden means less time spent dealing with regulation and more time spent on productivity-enhancing activities. For the community, less regulatory burden can mean lower prices (because farmers face lower costs), fewer taxpayer dollars spent on regulation and improved living standards.

1 Our approach to reviewing regulation

To identify regulations that impose unnecessary regulatory burdens on the agriculture sector, we asked four questions (figure 1).

- What are the objectives of the regulation?
- Are the objectives of the regulation clear and relevant (that is, do the objectives address an economic, social or environmental problem)?
- Does the regulation achieve these objectives (is it effective)?
- Could the costs of the regulation be reduced or the benefits increased (is there a more efficient way to achieve the same objective)?

Figure 1 **A framework for reviewing existing regulation**



For the purpose of this inquiry, 'regulation' is defined as any laws or other government rules (such as standards and codes of conduct) that influence or control the way people and businesses behave.[1]

The focus of the inquiry is on unnecessary regulations that have a *material impact* on the domestic and international competitiveness of farm businesses and on the productivity of Australian agriculture. However, when examining regulations (and their materiality), regulations are assessed against providing a net benefit to the Australian community, not just to the agricultural sector.

With only limited quantitative evidence on the costs of regulations, materiality is based on judgments about the potential gains to the Australian community from removing or amending regulations. Other factors taken into account include the number of businesses and consumers affected (directly and indirectly) and whether the regulation spans multiple jurisdictions or agricultural industries.

There are regulations at every stage of the supply chain

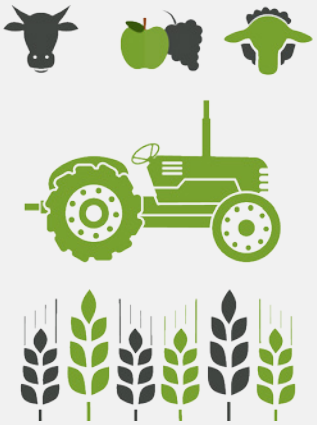
At each stage of the agricultural supply chain there are regulations in place, including for land acquisition and preparation, capital and labour use, transport of inputs and outputs, marketing and product sales (table 1).

All levels of government impose regulations that affect the agricultural sector.

- The Australian Government is mainly involved in regulating national and interjurisdictional issues, including biosecurity and access to agricultural and veterinary (agvet) chemicals. The Department of Agriculture and Water Resources is responsible for around 90 non-fisheries related Acts. This is a small proportion of the regulations affecting farm businesses. Others include those from the environment, treasury, immigration, infrastructure and industry portfolios. Most of the concerns about regulatory burdens were about regulations that are not specific to the agriculture sector.
- State and territory governments administer regulations including in the areas of road transport, environmental protection, native vegetation management, land tenure and land use. As an indicator of the extent of regulation at the state and territory level, AgForce said that in Queensland, agriculture was affected by over 75 Acts and regulations covering 17 590 pages.
- Local governments implement regulations (often on behalf of state and territory governments) in the areas of land use, planning and (in some cases) environmental protection, as well as setting conditions for local road access by heavy vehicles and farm machinery.

1 User charges and taxation are not in scope.

Table 1 **Regulation across the agricultural supply chain[a,b]**

Key Australian Government involvement/regulation	*Key stages of the agricultural cycle*	*Key state/territory government involvement/regulation*
• native title • environmental protection – biodiversity conservation – natural, cultural and world heritage – climate change	Acquisition, leasing and preparation of land 	• land tenure and use – *land use planning* – *building regulations* – *pastoral leases* • environmental protection – *native vegetation* – *natural, cultural and world heritage*
• biosecurity – pest surveillance • export control • environmental protection – biodiversity conservation – natural, cultural and world heritage – climate change – national pollutant inventory • national land transport regulatory frameworks • water access and regulation • welfare of exported animals	Agricultural production and on-farm processing 	• agricultural and veterinary chemicals • animal welfare • biosecurity – *pest and disease control and response* • food certification for export • *building regulations* • genetically modified crops • land use planning • livestock regulation and identification • transport – *road access* – *transport and use of machinery* – vehicle and machinery licensing • water access and regulation
• biosecurity – pest surveillance • export control • national land transport regulatory frameworks • shipping and maritime safety laws • welfare of exported animals	Transport and logistics 	• transport regulations – *road access* – *transport and use of machinery* – vehicle and machinery licensing • animal welfare • livestock regulation and identification
• food labelling • food standards • biosecurity – pest surveillance • export control • welfare of exported animals	Marketing 	• *food safety* • food packaging • biosecurity – pest and disease control and response • food certification for export

[a] *Italics* denote local government responsibility in at least one jurisdiction. [b] There are also a range of issues and regulations that affect all stages of the agricultural supply chain. Cross-cutting issues include investment opportunities and access to capital, as well as regulations relating to competition, foreign investment, immigration, industrial relations, work health and safety, and taxation.

Regulations covering some areas, such as aspects of environmental protection, are covered by all three levels of government. There are also other regulations, such as those relating to water use and temporary labour from overseas, that affect a range of businesses across the economy, but are of particular concern to some farm businesses.

Farm businesses are very concerned about the cumulative burden of regulation. Many farm businesses spoke about the large number of regulations that directly affect them. The Consolidated Pastoral Company (one of Australia's largest beef producers), for example, estimated that it complies with, or takes account of, over 300 Acts, regulations and codes.

It is the cumulative burden of regulation that provoked the most comment in consultations conducted on this inquiry. One participant (AgForce) said that:

> The regulatory burden within Australian agriculture is effectively a cumulative one; resulting from the impact of many individual regulations of which each regulation, seen in isolation, does not appear to represent a significant imposition.

Another (the Tasmanian Farmers and Graziers Association) said that:

> It is only when we have the accumulated burden of federal, state, local government and regional council associations that we begin to understand that with four or more layers of competing and often contradictory regulation it becomes near impossible to find an economical way through. When coupled with seemingly minor regulatory imposts, the competitive burden can become overwhelming. The malaise of regulation often leads to developments not proceeding on the basis that it is all too hard.

The Commission undertook a number of case studies to get a better sense of the magnitude of the cumulative burden of regulation on farm businesses.

Given the breadth (and depth) of the regulatory environment, the Commission was greatly assisted by inquiry participants in identifying areas of regulation where regulatory burdens are excessive. Suggestions for reform were assessed in terms of their potential to yield net benefits to the community.

2 Benefits, not just costs, are acknowledged

By design, regulation imposes costs on those affected, including farm businesses. However, the benefits of well-designed and -implemented regulation would be expected to outweigh the costs to the community as a whole. Good regulation should also achieve its stated policy objectives at least cost to the community. The agriculture sector openly acknowledges that regulation is critical to its ability to function effectively. For example, Australia's biosecurity regulatory arrangements were highlighted as providing a reputational advantage to Australian farmers and access to premium export markets.

However, inquiry participants also identified regulations in a number of areas that impose unnecessary compliance and administrative costs on farm businesses that reduce flexibility

or discourage innovation or the use of more efficient production techniques. Farm businesses provided many examples of unnecessary paperwork and excessive amounts of time and energy spent complying with regulatory requirements, such as applying for permits, filling out forms and reporting to regulators (box 1).

Box 1 Examples provided by farm businesses about excessive burdens of regulation

A Queensland producer described what was required each time he moved his oversized agricultural machine between farms along 25 kilometres of a public road:

- two transport permits from the state transport department — one for the machine, and one for the route taken
- a railway crossing permit from the state's rail authority (this had to be lodged four days in advance, and the vehicle was required to cross the railway within the nominated time frame otherwise a new permit was required)
- two police drivers (the producer had to pay for the personnel time)
- a permit from the local council and the telecommunications and electricity infrastructure companies. While the permits lasted 12 months they took five days to process.

These types of application processes are time consuming, administratively burdensome and interfere with weather-dependent farming activities.

A landholder in New South Wales who sought to clear 1.2 hectares of land for a blueberry farm near Coffs Harbour found that state government approval was not required as the clearing was considered to be clearing of 'regrowth' under New South Wales native vegetation laws. However, because the proposed clearing area included the habitat (or potential habitat) of seven species listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth), the landholder was required to submit 60 pages of documents and 18 maps to the Australian Government Department of the Environment. The outcome was that Commonwealth assessment and approval was not required, as only five of the protected plants were in the proposed clearing area (and thousands remained elsewhere on the property).

In sum, participants want the burden of regulation reduced, including its cumulative burden, but do not want to eliminate all regulations. And in some areas, such as competition policy, some are seeking more rather than less regulation.

3 Some common themes

Questionable, unclear or conflicting regulatory objectives

Some questionable objectives were uncovered when we asked the question, 'is the objective of the regulation affecting farm businesses clear and relevant?'. Examples include:

- the regulation of genetically modified organisms (GMO) for marketing purposes when there is evidence that industry (both in states without regulatory restrictions and

internationally) can successfully manage the co-existence of GM and non-GM products. There is also little evidence of GMO-free marketing benefits at the bulk trade level

- the reregulation of sugar marketing in Queensland has the stated objective of allowing sugar cane growers to choose their marketing arrangements. However, the evidence suggests that the preferred choice of marketing arrangements is likely to reduce the productivity and profitability of the industry by constraining investment and structural adjustment
- coastal shipping regulation — the objective of reforms made in 2012 was to create a regulatory framework that 'maximises the use of' Australian vessels, but the effect was to increase the barriers to entry for foreign flagged vessels.

In other cases, assessing the effectiveness of regulation was difficult because the objectives are unclear or conflicting. Areas of particular concern are land use and environmental regulation. For example, some states' native vegetation laws outline social and economic interests alongside environmental interests, but also aim to improve native vegetation (with an absence of guidance on how decision makers should weigh the objectives).

In the area of animal welfare regulation, the objectives are unclear because they are tied to community expectations, and these are not well understood or articulated (nor are the welfare implications of various farming practices well understood by the community). The lack of understanding and agreement about what community expectations are has also contributed to conflicts in the development of animal welfare standards and guidelines, particularly between industry and animal welfare groups.

The Australian Government has stated publicly that it welcomes foreign investment because of the important and beneficial role it plays in the Australian economy. However, it recently made changes to Australia's foreign investment framework (in response to community concerns) that impose additional costs on foreign investors, create uncertainty, and could discourage investment in the agricultural sector. Government policy on foreign investment has at times been dissonant.

Duplicative roles and regulation

Duplicative and overlapping regulation between the three tiers of government is a major area of concern. Farm businesses also spoke about overlapping reporting requirements and inconsistent decision making between regulators. Some examples include:

- overlap and duplication between the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) and state native vegetation regulations
- overlapping Australian and state government responsibilities in the management of water resources. Farmers complained that they are required to submit the same or similar data to different agencies. Data sharing should be significantly increased in this area.

Regulatory inconsistencies across jurisdictions

In some areas, inconsistent regulation across jurisdictions was identified as a source of an unnecessary regulatory burden, making it difficult for farmers to understand their obligations and adding to the cost of doing business. There were calls for a more coordinated or national approach in a number of areas:

- *animal welfare* — inconsistent regulation makes it difficult to effectively inform and educate consumers, and inconsistent standards create uncertainty for industry
- *biosecurity* — while different regulations across jurisdictions reflect their specific risks, in some cases regulations can unnecessarily hinder access to interstate markets and add to the cost of transporting products between jurisdictions
- *heavy vehicle access regulations* — differences across the road network lead to increased compliance costs for producers (such as costly changes to vehicle configurations and loads to meet different requirements).

Calls for more risk-based and flexible approaches

Regulations that are unnecessarily complex and overly prescriptive were identified in a number of areas, including planning and development, and work health and safety. For example, concerns were raised about the testing of agvet chemicals sometimes not taking into account assessments undertaken by well-regarded overseas regulators. Agvet chemicals that have been assessed and approved by well-regarded overseas regulators are unlikely to pose the same risks as those that have not. Failure to accept international evidence delays the availability of productivity-enhancing chemicals for farmers and adds to costs.

Native vegetation and biodiversity conservation regulations were also identified as being onerous and disproportionate to risk. Similarly, environmental regulations relating to noise, odour, air emissions and waste discharge were found to affect the efficiency and productivity of certain agricultural industries (particularly intensive livestock facilities). These impacts can be the result of the rigid application of regulations primarily designed for different industries, such as manufacturing, to the agricultural setting without a full assessment of the effects of doing so.

In some areas (including biosecurity and animal welfare), participants called for greater reliance on industry-led initiatives, such as quality assurance schemes, to improve regulatory outcomes and reduce the costs of complying with regulation.

Good regulatory processes are not always observed in practice

Good regulation-making processes are essential for good quality regulation and evidence-based policy making. Participants to this inquiry strongly supported these

processes. However, good regulation-making processes are frequently not followed in practice. The Commission found examples of:

- regulatory impact assessments (RIAs) that failed to rigorously assess the costs or benefits of regulations
- RIA processes that considered only a limited range of options
- regulations that were put in place despite a finding that the regulation would impose a net cost on the community
- RIA processes that appear to have been disproportionally influenced by particular stakeholders (box 2).

Stronger oversight of the quality of RIA processes is one way to reduce the incidence of regulations being put in place when there is no case for doing so. Wider and more systematic stakeholder engagement is another — drawing on a wider evidence base can improve the assessment of the costs and benefits of any proposed regulations. Stakeholder engagement is also an important step in determining whether regulation is the most apposite policy tool to use, and where it is, to design it so that it achieves its policy objective in the simplest and most cost-effective way. A number of participants to this inquiry commented favourably on stakeholder engagement on the *Biosecurity Act 2015* (Cwlth).

It is important that RIA processes are used as an essential analytical tool to support the quality of regulation making, not as a legitimising tool or compliance exercise. RIAs enable potential regulatory burdens to be considered before they are imposed, and place regulatory burdens in context (that is, against the potential benefits). Some of the regulations that farm businesses were most critical of were found not to have been subject to good RIA processes.

However, improving the quality of regulation involves more than good RIA processes. No one-off inquiry (such as this) or red-tape reduction target will be able to eliminate or reduce the regulatory burdens that comprise a 'death by a thousand cuts'. As regulatory burdens (over all levels of government) change because of interactions with other regulations, it is not sufficient to merely examine the impact of new regulations. Policy makers within all government agencies should take responsibility for actively examining the impact of regulations under their remit to help inform the direction of policy and regulatory reform that could benefit the community. The price of liberty from unnecessary regulatory burdens is eternal vigilance.

Box 2 **Good RIA processes are not always followed in practice**

The Tasmanian Government prepared a regulation impact statement (RIS) to assess an extension of the moratorium on the commercial release of genetically modified (GM) organisms into the environment. A marketing advantage in domestic and international markets was noted as one of the main benefits of maintaining Tasmania's GM organism free status. However, the value of this was not quantified (but was assessed to be 'not insignificant'). The benefits of allowing GM crops were theoretically assessed as being relatively small. The RIS concluded that the (unquantified) benefits were likely to be substantial and to exceed the costs of extending the moratorium from 2014 to 2019. (By contrast, a cost–benefit analysis conducted as part of the review of the moratorium on GM canola in Victoria estimated that the Victorian moratorium imposed a net cost. The moratorium was allowed to expire.)

There were also examples of regulations being introduced despite findings that there would be a net cost to the community. In December 2015, the Queensland Parliament passed the *Sugar Industry (Real Choice in Marketing) Amendment Act 2015* which reregulates the international marketing of Australian sugar. The amendments were introduced despite a highly critical RIS which found no case for the regulation and also that the costs would outweigh the benefits (and the overall returns to the sugar industry could be reduced). Similarly, the RIS for the (recently abolished) Road Safety Remuneration Tribunal found that the road safety remuneration system would lead to net costs.

The Commission also found examples where only a limited range of options were considered in RISs. One example was the RIS assessing the value of egg stamping in improving traceability. This RIS did not consider alternative traceability systems, such as egg carton labelling or requiring restaurants and caterers to keep records of the eggs they were supplied with.

Disproportionate industry influence in RISs was also raised as a concern by some participants. For example, for the newly endorsed sheep standards and guidelines, the assessment made in the RIS with respect to pain relief for mulesing was that the net incremental welfare benefits did not justify the additional compliance costs to industry. This assessment was based on the views of a reference group, which comprised representatives of 11 national livestock industry organisations, representatives from the eight state and territory relevant government departments, and the Australian Government, two animal welfare organisations and the Australian Veterinary Association.

Ongoing changes to regulations create uncertainty

Changing regulations create uncertainty for farmers. Farmers stressed the importance of clarity in the objectives of regulation, and having sufficient time to adjust to regulatory changes. For example, fears of future changes to native vegetation regulations can create perverse incentives by encouraging landholders to plant exotic plants instead of native plants, or clear native vegetation as insurance against future policy changes. This type of pre-emptive clearing was recently reported to be occurring in Queensland ahead of foreshadowed changes to the laws in that state.

Regulators could be better communicators

In some areas, regulations could be clearer and regulators could do more to communicate regulatory requirements to farm businesses and their advisors — complexity adds to compliance costs and a potentially higher incidence of inadvertent non-compliance by farm businesses. A number of farm businesses (especially small farm businesses) complained that they struggled to navigate their way through the complex web of rules. GrainGrowers, for example, said that:

> A key issue for farmers navigating the regulatory space is the lack of clarity around what regulations apply to different activities and how best farmers can work within their legal boundaries. The time spent attempting to work out regulatory requirements, including the many potential 'missteps' that can occur along the way due to misinterpretations or lack of knowledge, are themselves a form of red tape.

Work health and safety and environmental regulations were identified as areas where complexity is a particular concern.

4 Issues by topic area

Land use and access regulations

About half of Australia's land area is used for agriculture, with most of the land used for grazing. Land use for agriculture has come under increased scrutiny in recent years as a result of:

- the expansion of major urban centres and increasing residential populations in city fringe (peri-urban) areas
- the trend towards more intensive farming practices (which may affect the amenity of nearby residential areas)
- growing environmental awareness and the conversion of agricultural land to national parks and conservation areas.

These issues have put pressure on regulators to intervene in land use conflicts, including to curtail particular land use activities. Managing these tensions in a way that facilities the allocation of land to its highest value use is a key challenge for policy makers. It involves balancing land use against other considerations, such as the environment and native title interests.

Effective management of Crown land through reforms to leases

Restrictions on the use of Crown land place unnecessary burdens on farm businesses that lease Crown land. Pastoral leases offer less security of tenure than freehold land, creating uncertainty for leaseholders and investors. In addition, pastoral leases generally require

land to be used for a specific purpose, which, in conjunction with the difficulties associated with obtaining approvals for alternative uses, can hamper the ability of farmers to flexibly respond to environmental, economic and other factors.

Reforms from recent reviews relating to Crown land and pastoral leases have the potential to improve security of tenure and land use flexibility for leaseholders, and to promote more efficient use of, and investment in, land. Possible solutions include:

- extending the length of leases or introducing rolling leases
- allowing the conversion of leases to freehold land
- streamlining land use restrictions, including implementing land management objectives directly through land use regulation, rather than through pastoral lease conditions.

Managing conflicts between agriculture and other land uses

Another concern for farm businesses is the conflict between agricultural and other land uses, particularly residential land use, and resource exploration and extraction. There is a role for government in promoting the efficient allocation of land rights and the timely resolution of land rights conflicts. However:

- policies that seek to protect existing land uses as an *a priori* objective are unlikely to be consistent with the promotion of efficient land use
- it is likely that conflicts between residential and agricultural land uses would be more effectively managed directly through planning and zoning regulations, rather than indirectly through laws barring actions in nuisance against agricultural land uses ('right to farm' laws)
- granting farmers a right of veto over land access by resource companies would arbitrarily transfer property rights from the community as a whole to individual landholders and would not be consistent with facilitating efficient overall land use.

In principle, the beneficiaries of any additional property rights, such as those arising from the conversion of leasehold to freehold title or the right to veto land access, should bear the opportunity cost of that allocation. This includes any increase in the market value of the land, as well as any administrative costs of implementing the change. Aligning the incidence of the costs and the benefits of property rights helps ensure that their allocation is efficient and that land is put to its most valuable use.

Planning, zoning and development processes are a continual regulatory concern

Planning, zoning and development assessment processes can be a significant source of unnecessary burdens for farmers. Many of these regulations and processes are unnecessarily complex, time consuming and costly. While there are many recent and ongoing reviews of these issues, adoption of leading practices has been patchy and slow. In addition, planning regulations, such as building codes and the classification of intensive

agriculture, sometimes fail to meet their regulatory objectives because they are not readily adaptable or targeted for managing agricultural land uses. These problems could be addressed by ensuring that regulation is fit for purpose and implementing outcomes-based (rather than prescriptive) regulation.

Environmental regulation

Farmers, as significant landholders, play an important role as managers of the environment. Farmers have an incentive to conserve the environment where doing so provides a net benefit to their business. But there can also be public benefits from environmental conservation (hence a role for governments).

Regulations aimed at the conservation of native vegetation, biodiversity and threatened species are complex. There are also multiple pieces of legislation with many overlapping federal, state and (sometimes) local government requirements, as well as international conventions to which Australia is a signatory.

The Commission heard that native vegetation and biodiversity conservation regulations may:

- impede productivity improvements, including by limiting farmers' capacity to respond to changing circumstances. For example, the Australian Farm Institute described New South Wales native vegetation laws as 'a cumbersome and tangled web of productivity-sapping regulations'
- place considerable costs on farm businesses, including the cost of conserving species and ecosystems that benefit the wider community
- involve complex and costly processes (including the need to obtain and pay for detailed specialist advice about the presence of threatened species on the property)
- be duplicated across different levels of government. A farmer wanting to clear trees may need approval from both the Australian Government under the EPBC Act and the relevant state government under its native vegetation and/or threatened species legislation
- be in some cases administered in a very bureaucratic and inflexible fashion. While states' native vegetation legislation typically seeks to promote social, economic and environmental interests, in some states these laws are administered by regulators who are unwilling to tolerate any environmental harm, even for potentially large social or economic benefits (and thus take a lexicographic approach to environmental protection)
- be rigid and contribute to landholders' distrust of government, and limit their voluntary participation in environmental programs and actions (box 3).

Governments are addressing some of these concerns, including by developing consistent assessment processes for the listing of threatened species and establishing one-stop shops

for environmental assessments and approvals. The Commission supports the continuation of these initiatives. However, further action is required.

Box 3 One farmer's experience when trying to improve environmental outcomes

The owner and operator of a large cotton farming business on the Macintyre river in southern Queensland told the Commission about his experience dealing with regulatory agencies and local councils when trying to improve environmental outcomes on his property. A recent flood event led to frog spawning and an increase in the water bird population on the farmer's property. The farmer sought to prolong this natural event by adding water from his farm to the natural flow. Timing was critical because, in order to benefit the bird population, the water from the farm needed to arrive before the natural flow dried up.

It took the farmer six weeks to negotiate with multiple agencies (at considerable cost) before permission was granted to supply water for this ecological application. The lengthy delays reduced the effectiveness of the water flow. According to the farmer, each agency was focused exclusively on its area of responsibility and they were unable to work together. For example:

- the authority in charge of stock routes initially rejected the proposal due to its potential to cause erosion, while the local council was concerned with flood risk
- the farmer had to build a pipeline under a main road to reduce the risk of erosion as well as increase the capacity of the culvert (to allow water flow) that was already in place
- a temporary weir was built at the head of this pipeline to make it more effective, but had to be removed following a complaint from a local resident.

The farmer reported that he had to convince an environment authority of the merits of the proposal. He hired a zoologist to monitor bird species before and after the flow. The farmer was also required to design the activity to fit within the regional irrigation management plan, and to gain permission from other landholders. He was also required to test the water quality before and after the flow.

According to the farmer, the environment agency insisted that the project be labelled as a 'pilot' so that it did not form a precedent committing them to similar projects in future. The farmer, however, would like to do similar projects more efficiently in future.

Although the flow did eventually take place, its biological effectiveness was reduced by the delay. The experience left the farmer with a sense that regulatory agencies exist to inhibit rather than enable innovative projects.

Source: Productivity Commission case study interview (appendix C).

Native vegetation and biodiversity conservation regulations should be changed so that they consistently consider economic, social and environmental factors; account for the impact of proposed activities on the landscape or the region (not just the impact on individual properties); and are based on an assessment of environmental risks.

Better use could be made of market-based approaches to native vegetation and biodiversity conservation. This could include governments buying environmental services (such as native vegetation retention and management) from landholders. Requiring governments to fund conservation helps discipline governments' demand for conservation on private land

(rather than treating it as a 'free good' where more is always better). Importantly, where governments choose to allocate land for conservation, they should provide adequate funding to manage and maintain the holdings free from weeds and pests which can affect adjoining properties.

The administration of native vegetation and biodiversity conservation regulations could also be improved (including in some cases, changing the ways in which regulators work with landholders). Governments could improve the advice and support they provide to landholders, so landholders are more aware of environmental regulations and what is required of them under the regulations. This would be facilitated by building the capability of, and landholders' trust in, environmental regulators.

Water regulation

Water is an essential input for farm businesses. It is used for irrigating crops, as drinking water for livestock and for managing waste in intensive livestock and processing industries. The agricultural sector accounts for around two-thirds of Australia's total water consumption.

Water regulation at the farm level is focused on creating markets in regions (where this is viable) to allow surface water to be traded to its highest value uses. Farmers reported that water trading has increased the productivity of their businesses by providing them with the flexibility to buy and sell water in response to changing market and seasonal conditions. While farmers reported that there is room for improvement, they also said that the process of trading water is gradually becoming faster and more efficient.

As regulation of surface water matures, the attention of regulators is turning to groundwater and the interception of overland flows on farms. The regulation of groundwater and overland flows has the potential to increase the security of the water entitlements held by farm businesses.

Complexity and change in water regulation is contributing to the cumulative burden felt by farm businesses. The diversity of Australia's river catchments limits the potential to address this complexity by streamlining regulation and making it more uniform. More flexible governance arrangements may be needed to develop locally apposite regulations for accessing water. The Commission will examine these and other water-related matters in its future work program in light of the repeal of the *National Water Commission Act 2004* (Cwlth).

Regulation of farm animal welfare

A number of concerns about farm animal welfare were raised by participants, including that:

- animal welfare regulations are not meeting community expectations about the humane treatment of farm animals
- there is a risk that unnecessary regulations will be imposed on farmers based on emotive reactions rather than evidence-based policy (including evidence on what represents an improvement in the welfare of farm animals and how this is valued by the community)
- the current arrangements are a patchwork of different standards that impose costs on businesses operating in more than one state, create confusion for consumers and reduce competition between producers (free-range hen stocking densities were raised as an example)
- there are conflicts of interest under the current governance arrangements.

Australians generally accept the rearing of animals for commercial purposes (revealed by their consumption of animals as food or in other products). They also place a value on farm animal health and wellbeing (welfare) and benefit from knowing animals are being treated humanely.

Good animal management practices are an essential part of commercial livestock operations. Many welfare improvements increase the productivity and profitability of livestock operations. Producers also have an incentive to improve animal welfare to meet changing consumer demands for higher welfare products. However, some welfare measures, such as those that reduce the intensity of production processes, may increase costs without offsetting gains to the business.

Farm animal welfare is a policy area that is expected to evolve over time as community attitudes change and as new scientific evidence becomes available. The policy challenge is to have arrangements in place that can transparently deliver balanced outcomes over time.

Regulation of domestic farm animal welfare could be improved

Since the 1980s, the welfare of farm animals in Australia has been governed by a series of national Model Codes of Practice, implemented by state and territory governments (many of which were implemented as voluntary standards). The codes cover a number of categories of livestock (cattle, poultry, pigs and sheep) and include land transport, processing, and saleyard codes. In 2005, the Australian, state and territory governments agreed to convert the codes into mandatory standards and voluntary guidelines that reflect contemporary scientific knowledge and community expectations for animal welfare. However, progress has been very slow.

There is scope for greater rigour and balance in the process of developing national farm animal welfare standards and guidelines. And importantly, for science and (soundly elicited) community values and expectations to play a more prominent role. Without reform to the process, there is a risk that the agricultural sector, and the Australian community, could continue to be faced with a patchwork of different regulatory arrangements across jurisdictions that do not rigorously balance economic and social considerations. There are three areas where farm animal welfare regulations could be improved.

- The objective of the national standards and guidelines needs to be clearer.
- Standards and guidelines should be evidence-based, drawing on the existing body of evidence on animal welfare science and research on community views of animal welfare. This evidence should also be used in RIA processes.
- There needs to be more independence in the standards development process so that outcomes are not overly influenced by the views of any one group, such as industry or animal welfare or rights groups. Judgments made to balance conflicting considerations should be transparent and apply rigorous scientific principles. Surveys of community expectations for animal welfare should be statistically robust and transparent.

The Commission considered a number of options to improve the standard setting process. These included establishing an independent animal science and community ethics advisory body to provide independent advice in the standards setting process, or alternatively, for an independent body to be responsible for developing the standards and guidelines. Another option considered was the Australian Government taking responsibility for all aspects of farm animal welfare regulation.

On balance, the Commission considers that the most effective approach would be to establish an independent body tasked with developing the national standards and guidelines. The body would be responsible for managing the RIA process for the proposed standards, and would include a science and community ethics advisory committee to provide independent and rigorous evidence on animal welfare science and community values. The body would also disseminate information to the community on best-practice farm animal husbandry practices and contemporary animal welfare science, including through the development and publication of the standards and guidelines.

The body could also be responsible for regularly providing an independent assessment of the effectiveness of monitoring and enforcement activities, and assessing the performance of the live export regulatory system.

Live export regulation is costly but has led to some improvements

Following the public response to ABC's *Four Corners* footage of mistreatment of Australian animals in some Indonesian abattoirs in mid-2011, Australian trade of cattle for slaughter to Indonesia was temporarily suspended. During the suspension, the Australian

Government and industry developed a new regulatory framework — the Exporter Supply Chain Assurance System (ESCAS). The ESCAS was first implemented in Indonesia in August 2011 and then extended to all countries receiving Australian livestock during 2012.

The ESCAS has the objectives of:

- providing assurance to the Australian community that the welfare of animals exported from Australia is maintained through to the point of slaughter in the importing country
- facilitating the livestock export trade so that exporters can increase market share overseas.

Industry and animal welfare groups support the ESCAS, although some animal welfare and animal rights groups would prefer a ban on live exports, and along with some other participants, argued for the system to be strengthened. There has also been a renewed call for a ban on live exports following reports of inappropriate handling and slaughter of cattle at ESCAS facilities in Vietnam in June 2016.

The ESCAS has led to some improvements in welfare outcomes for Australian livestock in some overseas export supply chains. For example, the rate of pre-slaughter stunning has increased in Indonesia, as has awareness of international welfare standards in some overseas countries.

However, industry raised concerns about the significant administrative burden that the system imposes. The regulatory burden on exporters could be reduced through greater cooperation between exporters themselves, including the sharing of audits and reliance on an industry quality assurance program that involves animal welfare assurance and independent auditing.

Whether an industry-developed quality assurance program could be used by exporters to demonstrate compliance with the requirements of the ESCAS depends on whether it can be shown to assure the welfare of Australian live exports in line with the Australian community's expectations. It is critical that the community has confidence in the system used to regulate live exports. Incidents of mistreatment of animals in facilities that are within the purview of the ESCAS, and that are overseen by the Australian livestock industry, reduce community confidence in the trade and the regulator's effectiveness.

Genetically modified crops

State and territory moratoria on the cultivation of genetically modified crops were a major concern of participants. Many argued that the moratoria (effectively bans) on GM crops were unwarranted and that they deny farmers access to technological advances that are critical to remaining competitive internationally.

The effect of GMOs on human health and safety and the environment is assessed at a national level by the Office of the Gene Technology Regulator (OGTR). The OGTR is a

respected regulatory body that relies on credible scientific evidence. It conducts risk assessments on GMOs, identifies risk management controls, and grants licences for dealings with GMOs. Before issuing a licence for use of a GMO, the regulator must be satisfied that any risks to health, safety and the environment can be managed. The OGTR has approved certain varieties of GM cotton and canola for release in Australia, having assessed these to be no less safe than their conventional counterparts.

Despite this, a number of state and territory governments have imposed moratoria on the cultivation of GM crops, pointing to market access and trade benefits such as price premiums for non-GM crops. These benefits are questionable. However, even in the presence of such benefits, because GM and non-GM production systems can coexist, the claimed benefits of the moratoria would be able to be achieved. (The ability for GM and non-GM crops to coexist has been demonstrated both in Australia and overseas.)

New South Wales, Western Australia, South Australia, Tasmania and the Australian Capital Territory should remove their moratoria. State and territory governments should also repeal the legislation that imposes moratoria or gives them the discretion to designate GM-free zones. This will provide certainty to businesses that the moratoria will not be re-introduced in the future.

Removal of the moratoria should also be accompanied by providing accurate information to the community about the actual risks and benefits of GM technology, and the gene technology regulatory framework in Australia. This should help build confidence in Australia's regulation of GM technology. Government agencies in charge of the agriculture portfolio at the state and territory level should provide this information, and could be supported by the OGTR and Food Standards Australia New Zealand (FSANZ) at the national level.

Regulation of agricultural and veterinary chemicals

Access to agvet chemicals depends on an array of regulations administered by the Australian, state and territory governments. The Australian Government controls all regulatory aspects of agvet chemicals up to the point of sale, and state and territory governments are responsible for controlling the use of agvet chemicals after retail sale. The Australian Pesticides and Veterinary Medicines Authority (APVMA) is an independent statutory regulator that discharges the responsibilities of the Australian Government. This includes assessing chemical products for their impact on human health, the environment, and trade, as well as for their efficacy.

Despite numerous reviews of, and subsequent changes to, the regulation of agvet chemicals, problems remain. Inquiry participants highlighted that the registration and assessment requirements for products already registered overseas are often duplicative, with the result that farm businesses are prevented from, or delayed in, accessing important agvet chemicals. While the APVMA already takes international evidence into account in its assessments, there is scope to do more. For example, the APVMA could rely on the

registration decisions of reputable and comparable international regulatory agencies with similar outcomes in risk management. The Department of Agriculture and Water Resources is considering reform in this area and the Commission considers that this work should be pursued with high priority.

There are also differences in state and territory control-of-use regimes for agvet chemicals. In particular, there are differences in permitted 'off-label' uses, and these are not justified by regional factors such as geography. A national control-of-use regime has been proposed, but progress has been slow and the proposed scheme only includes minimal harmonisation of off-label use provisions. Work on implementing a single control-of-use regime (that includes increased harmonisation of off-label use provisions) should progress more rapidly, and the regime should be in place by the end of 2018.

Biosecurity regulation

Australia's biosecurity system is vital to maintaining the competitiveness of the agricultural sector and protecting Australia's unique environment. The entry of serious exotic pests, weeds or diseases into Australia would have a major impact on Australian farmers, including loss of production and access to premium export markets. Biosecurity activities also protect the community from harmful diseases and the natural environment from exotic threats. An effective biosecurity system should be risk-based, and not used to protect local industries from international competition.

The Australian Government has recently modernised biosecurity legislation by introducing the Biosecurity Act, which took effect in June 2016. The new Act is designed to reduce red tape and provide a more flexible risk-based approach to compliance.

Many inquiry participants were highly supportive of the new Act, but some concerns were raised about self-regulation by industry through approved arrangements and the potential for adverse impacts on Australia's biosecurity system. Assessing the impact of approved arrangements is difficult given the Act only took effect in June 2016. However, businesses were previously able to apply to self assess risks under the *Quarantine Act 1908* (Cwlth). The new approved arrangements mainly streamline this application process, reducing costs to businesses.

Another area of concern was that the governance arrangements for biosecurity remain siloed, with a lack of coordination across states and territories (each of which have biosecurity regulations). While states and territories can face different risks, unnecessarily different biosecurity regulations can create barriers to interstate trade.

Australia's biosecurity system will be most effective when resources are targeted to those areas of greatest return to the nation, from a risk management perspective (including whether resources are directed towards pre- and post-border activities or towards particular diseases, weeds or threats). Positive progress has been made towards a more coordinated approach to Australia's biosecurity arrangements, and developing national priorities for

investment. The current independent review of the Intergovernmental Agreement on Biosecurity will assess the effectiveness of the agreement and its capacity to support a national biosecurity system going forward. The review should also look at whether clearer national leadership (by the Australian Government or another national body) could improve Australia's biosecurity system.

Transport regulations

Given the long distances between many of Australia's farms, intermediaries (such as sale yards and abattoirs) and end users, an efficient and cost-effective transport system is critical to the competiveness of the agricultural sector. Most transport regulation concerns for farmers related to heavy vehicle road access, and included:

- inconsistent heavy vehicle regulation between jurisdictions
- restrictions on access to the road network, especially for the 'first and last mile' of a journey
- processing times for road access permits
- restrictions on moving agricultural machinery.

The creation of the National Heavy Vehicle Regulator (NHVR) is a step in the right direction for improving road access. However, heavy vehicle operators continue to deal with variations in regulations across jurisdictions and delays in obtaining road permits. The NHVR should be reviewed to ensure the system is delivering net benefits.

The time taken to process road access permits is prolonged because consent is required from state and local government road managers. To reduce the time required to obtain permits, the states and territories that are participating in the Heavy Vehicle National Law should look to increase the number of road routes that are gazetted for heavy vehicle access. This could be achieved by allowing industry to propose and undertake road route assessments for gazettal (as is currently the case in South Australia), or by directly funding assessments of both state and local roads (as in Queensland). Ideally, permits would only be required when there is a significant risk to public safety or infrastructure that must be managed on a case-by-case basis.

Road access restrictions can be partly attributed to the road funding model which does not link the cost of road use with road investment. A direct (or more cost-reflective) road user charging system could ensure a sustainable revenue base to recover road expenditures, and remove the need for road managers to restrict heavy vehicle access. (Pricing reform would also help address concerns over the effect of pricing distortions on investment in rail networks.) A Road Fund model (an institutional framework that involves a dedicated body responsible for managing the allocation of road revenues to road projects) would assist in ensuring that road investments are directed to where they have the highest value to road users. Better data on road user needs and the state of road assets is also required.

Farmers are required to obtain multiple permits and comply with other regulatory requirements (such as curfews and police escorts) to move oversized agricultural machinery on public roads. This can seriously interfere with weather-dependent activities that are time sensitive and need to take place at short notice. Issuing permits for longer periods of time or for multiple journeys, or removing the need for permits by making greater use of gazettal notices, would give farmers more flexibility.

Heavy vehicle operators must comply with driver safety regulations. The Road Safety Remuneration Tribunal had significant overlaps with existing heavy vehicle safety regulations, and poor regulatory processes were followed in its establishment. There was no evidence to suggest that such strong regulation of remuneration in the road transport sector was necessary. There was also no conclusive evidence of the link between remuneration and safety outcomes. The abolition of the Road Safety Remuneration Tribunal will reduce the burden of regulation. It is important that the resources reallocated from the Road Safety Remuneration Tribunal to the NHVR are used to improve road safety in all states and territories.

Other unnecessary transport-related regulatory burdens on farm businesses include:

- coastal shipping regulations which, by giving preference to Australian-flagged ships for transporting domestic cargo between Australian ports and extending the application of the *Fair Work Act 2009* (Cwlth) to foreign-flagged ships, increase costs for farm businesses reliant on sea freight. (As an example, Voice of Horticulture said that it costs $7.00 to ship a box of fruit from Tasmania to Brisbane, but only $5.60 to ship it from Tasmania to China.) To increase competition in coastal waters, coastal shipping laws should be amended to substantially reduce barriers to entry for foreign vessels
- ethanol mandates and excise arrangements. These should be removed as they deliver negligible environmental benefits and impose unnecessary costs on farmers and the community.

Food regulation

Governments in Australia regulate food to support public health and safety and inform consumer decisions about food. Food labelling regulations seek to ensure that labels convey correct and relevant information to consumers, while regulations regarding the production process protect consumers against unsafe practices.

Regulation of food labelling

Food labelling concerns were raised in four areas — country-of-origin labelling (CoOL), free-range egg labelling, labelling of GM foods, and gluten-free labelling.

CoOL requirements are confusing for consumers and limit Australian producers' ability to differentiate their products. To address these concerns, a new CoOL framework was

announced in March 2016. The new system requires products labelled 'made in Australia' to identify the proportion of Australian ingredients they contain. The new system is expected to help clarify the meanings of country-of-origin claims and save consumers time (by providing better visual elements on labels). What is unclear, however, is whether the new arrangements will deliver *higher* net benefits to the community as a mandatory or a voluntary system. A voluntary system could result in higher net benefits because a mandatory system imposes costs on all producers, but not all consumers' purchasing decisions are driven by country of origin. The Commission is seeking further information on the costs and benefits of a mandatory system compared to a voluntary system.

The production methods used for eggs labelled as 'free-range' do not always align with consumers' expectations (or understanding) of those methods, and consumers lack confidence that they are getting what they are paying for. The Australian Government recently announced an information standard for free-range eggs to create consistency and allow consumers to compare different 'free-range' eggs. The standard provides a definition for the term 'free-range' (with a maximum outdoor stocking density of 10 000 hens per hectare) and requires producers who claim that their eggs are free-range to prominently disclose the stocking density on the label. Compliance with the information standard provides producers with a safe harbour defence against allegations that they are engaged in false and misleading conduct.

The new standard should provide greater clarity for consumers. However, because poultry welfare outcomes are affected by the production system used (and hen welfare is one of the key reasons why consumers purchase free-range eggs), there should be consistency between animal welfare and egg labelling standards. The new information standard for free-range eggs was established independently of the conversion of the Model Code of Practice for poultry welfare into mandatory national standards and voluntary guidelines, and may need to be revised after this conversion has occurred.

Some participants argued that mandatory labelling of GM should be removed because GM foods are safe (and mandatory labelling imposes a cost on businesses). All GM foods must undergo a safety assessment by FSANZ, and therefore GM labelling is a consumer value issue, not a food safety issue. The Commission is not convinced that GM labelling should be mandatory merely to inform consumer choices — if consumers want to avoid GM foods, suppliers have an incentive to respond by voluntarily labelling their product as 'GM-free'.

While some consumers may use GM labels as an indication of food safety, the labelling of food in this way conflicts with regulatory assessments of the safety of GM foods. Consumers' concerns about the safety of GM foods would be better addressed by providing accurate and accessible information about the scientific evidence.

Gluten-free labels play an important role in ensuring the safety of food for some consumers. Australia's gluten-free labelling regulations are stricter than international standards, and evidence suggests that this is a barrier to the adoption of innovations in gluten-free foods such as the ultra-low gluten barley. The labelling standard should be

reviewed by FSANZ taking into account international standards and scientific evidence on the level of gluten that imposes a risk to gluten-intolerant consumers.

Regulation of food safety in the production process

The two key food safety concerns raised by participants related to egg stamping and food safety audits.

The Commission did not find evidence that egg stamping provides higher net benefits to the community than alternative approaches, such as requiring cartons to be labelled or requiring caterers to keep records, but seeks further information on this issue.

The costs and duplication of food safety audits, including those required by regulators, food retailers and export markets were also highlighted as an issue by participants. While a number of participants argued that food safety audits impose an unnecessary regulatory burden, often they were referring to audits conducted by commercial customers rather than those conducted for regulatory purposes. The Australian Food and Grocery Council and Horticulture Innovation Australia are currently working on aligning commercial auditing requirements of the major retailers to reduce the burden imposed on producers. Governments have also made good progress in minimising the burden of regulatory food safety audits by combining audits required under domestic and export regulations. The Commission did not identify significant scope for governments to further reduce the burden of regulatory food safety audits, but is seeking further information on this issue.

Foreign investment in Australian agriculture

Australia, as a relatively small open economy, relies (and has historically relied) on foreign investment to bridge the gap between national savings and investment.

The benefits of foreign investment to Australia's agricultural sector, including access to new technology, skills, knowledge and global supply chains, were readily acknowledged by participants. However, there is substantial public concern surrounding foreign investment in the agricultural sector. A number of public surveys, including the ABC's *Vote Compass* surveys and annual polls conducted by the Lowy Institute for International Policy, show that many Australians do not support foreign investment, and that they are particularly concerned about foreign investment in agriculture.

Some of the concerns, including fears that foreign investment will reduce Australia's food security, or result in a 'land grab' and loss of sovereign control over prime agricultural land, appear misplaced and may have arisen in part because of a lack of information and informed debate about foreign investment in Australian agriculture.

Australia's foreign investment review framework aims to balance the benefits of foreign investment against potential risks to Australia's national interest. The Treasurer's prior

approval is required for foreign acquisitions of agricultural businesses and land valued above prescribed thresholds (which trigger review of foreign investment proposals by the Foreign Investment Review Board).

In 2015, the Australian Government made a number of changes to the foreign investment review framework for the agricultural sector. These included:

- significantly lowering the screening thresholds for agribusiness (to $55 million) and agricultural land (to $15 million, based on cumulative land holdings) for investors from most countries
- establishing a national register of foreign ownership of agricultural land
- introducing application fees for all foreign investment proposals.

Some participants raised concerns about these changes, including that:

- lower thresholds could deter foreign investment in Australian agriculture and contribute to delays in processing investment proposals (as more proposals now require screening)
- the lower and cumulative screening threshold (combined with the introduction of application fees) for proposed investments in agricultural land could deter investment, impeding improvements to the sector's competitiveness and productivity.

Do the benefits of increased scrutiny outweigh the costs?

The lower screening thresholds (combined with different thresholds depending on the investor's country of origin) will increase the cost and complexity of investing in Australian agriculture. There is a risk that this will ultimately deter foreign investment in the sector without offsetting public benefits, particularly as other measures (such as the agricultural land register) are in place to increase transparency and public confidence about foreign investment in Australian agriculture. It is also unclear that national interest considerations are different for foreign investors proposing to invest in agriculture compared to other sectors of the economy that have a higher screening threshold of $252 million (including acquisitions in sensitive businesses, such as telecommunications, transport, defence and military related industries).

The Australian Government should raise the screening thresholds for agricultural land and agribusiness to $252 million — in line with the thresholds that applied for agriculture prior to 2015, and those that currently apply to business acquisitions and developed commercial land for investors from most countries.

Transparency (to the extent that it is consistent with national interest considerations) of the Treasurer's decisions on proposed foreign investments is important as it provides information to the public about foreign investment in agriculture. The register of foreign ownership of agricultural land should go some way towards increasing transparency and addressing public concerns about foreign investment in agriculture, although this will depend on the content of the Australian Tax Office reports derived from the register.

Employing overseas workers

The ability to access overseas workers is important for addressing labour shortages in the agricultural sector. Farm businesses reported high compliance costs associated with the temporary work (skilled) 457 visa programme and noted features of the programme that limit their access to overseas workers. Many of the concerns raised by participants were addressed in a recent independent review of the 457 visa programme (the Azarias review).

The recent proposal to tax working holiday makers as non-residents also generated some concern on the basis that it could dissuade overseas workers from coming to Australia. The Government is currently reviewing the proposal. This review will also look at the requirement for employers to make superannuation guarantee payments for working holiday makers (who, like other temporary residents, can access their superannuation when they depart Australia).

Most temporary residents are unlikely to use superannuation to save for retirement and some farm businesses claimed that being required to pay superannuation for temporary residents was an unnecessary compliance cost. While there are costs to farm businesses in administering superannuation guarantee arrangements for temporary residents, any changes to address these could have broader and unintended economic effects, and these effects should be considered by the review.

Competition policy

Competition is a key driver of innovation, productivity and competitiveness in agriculture. However, there are longstanding concerns about small farm businesses being subject to anticompetitive behaviour from dominant market players in the supply chain. Statutory marketing arrangements historically were used in attempts to provide farm businesses with countervailing market power. However, most of these arrangements have been removed and now concerns about anticompetitive behaviour are addressed under competition laws and industry codes of conduct.

The Rice Marketing Board in New South Wales is one of only two statutory marketing arrangement remaining. One of the board's objectives is to secure the best possible price for Australian rice in export markets. However, it is unclear whether Australian rice exporters receive a price premium for their rice. Repealing the *Rice Marketing Act 1983* (NSW) will create incentives for innovation and cost savings in rice marketing that could increase premiums for some rice growers.

It is illegal to sell fresh potatoes grown in Western Australia for human consumption without a licence from the Potato Marketing Corporation (a statutory marketing organisation of the Western Australian Government). The regulation of Western Australia's potato industry had its origins in concerns about reliable food supplies during World War II. The arrangements are out-of-date and have resulted in less variety and higher potato prices for Western Australian consumers. A Bill to abolish the Potato

Marketing Corporation is currently before the Western Australian Parliament. The planned deregulation of the potato industry in Western Australia will improve the responsiveness of the industry to changing consumer preferences and reduce the cost of potatoes in Western Australia.

Legislation was also passed in Queensland in December 2015 to enable sugarcane growers to direct how millers market sugar internationally. This is likely to restrict competition and deter investment in milling capacity and innovative marketing. Reduced or degraded milling capacity is likely to reduce the productivity of the industry as well as incentives for structural adjustment in sugarcane growing. There will also be less competition if existing sugar millers decide to leave the industry.

The existing competition regulation and oversight is adequate for managing concerns about abuse of market power by supermarkets and traders engaging with farm businesses. The current focus on the potential for the misuse of market power by wholesale merchants and supermarkets engaging with famers is not well supported by evidence.

Suggestions to amend section 45 of the *Competition and Consumer Act 2010* (Cwlth) are unlikely to increase the adoption of collective bargaining because they do not address significant economic disincentives and a cultural aversion in the agricultural sector to participating in cooperatives. Introducing an 'effects' test to section 46 of the Act is also unlikely to shield farm businesses from intense competition in retail food markets.

Draft recommendations, findings and information requests

Land use regulation

DRAFT RECOMMENDATION 2.1

Land management objectives should be implemented directly through land use regulation, rather than through pastoral lease conditions. State and territory governments should pursue reforms that enable the removal of restrictions on land use from pastoral leases.

DRAFT FINDING 2.1

Pastoral leases offer less security of tenure than freehold land, creating uncertainty for leaseholders and investors. In general, converting pastoral leases to freehold facilitates efficient land use.

DRAFT RECOMMENDATION 2.2

State and territory governments should:

- ensure that, where reforms to Crown lands confer additional property rights on a landholder, the landholder pays for the higher value of the land and any costs associated with the change (including administrative costs and loss of value to other parties)
- set rent payments for existing agricultural leases to reflect the market value of those leases, with appropriate transitional arrangements.

INFORMATION REQUEST 2.1

What are the advantages and disadvantages of 'right to farm' legislation? Are there any other measures that could improve the resolution of conflicts between agricultural and residential land uses?

DRAFT FINDING 2.2

Regulation and policies aimed at preserving agricultural land per se can prevent land from being put to its highest value use.

A right of veto by agricultural landholders over resource development would arbitrarily transfer property rights from the community as a whole to individual landholders.

Environmental regulations

DRAFT RECOMMENDATION 3.1

The Australian, state and territory governments, in consultation with natural resource management organisations, should ensure that native vegetation and biodiversity conservation regulations:

- are risk based (so that landholders' obligations are proportionate to the impacts of their proposed actions)
- rely on assessments at the landscape scale, not just at the individual property scale
- consistently consider and balance economic, social and environmental factors.

DRAFT RECOMMENDATION 3.2

The Australian, state and territory governments should continue to develop market-based approaches to native vegetation and biodiversity conservation. Where the community is seeking particular environmental outcomes, governments could achieve them by buying environmental services (such as native vegetation retention and management) from existing landholders.

DRAFT RECOMMENDATION 3.3

The Australian, state and territory governments should review the way they engage with landholders about environmental regulations, and make necessary changes so that landholders are supported to understand the environmental regulations that affect them, and the actions required under those regulations. This would be facilitated by:

- recognising and recruiting the efforts and expertise of landholders and community-based natural resource management organisations
- building the capability of, and landholders' trust in, environmental regulators.

On-farm regulation of water

DRAFT FINDING 4.1

Complexity and ongoing changes in water regulation contribute to the cumulative burden of regulation on farm businesses. However, the diversity of Australia's river catchments makes streamlining and harmonising regulation difficult. More flexible governance arrangements may be needed to develop locally appropriate regulatory settings for accessing water.

DRAFT RECOMMENDATION 4.1

The Australian Government should implement the findings of the Interagency Working Group on Commonwealth Water Information Provision to reduce duplicative and unnecessary water management information requirements imposed on farm businesses.

Regulation of farm animal welfare

DRAFT RECOMMENDATION 5.1

The Australian Government should take responsibility for ensuring that scientific principles guide the development of farm animal welfare standards. To do this, an independent body tasked with developing national standards and guidelines for farm animal welfare should be established.

The body should be responsible for determining if new standards are required and, if so, for managing the regulatory impact assessment process for the proposed standards. It should include an animal science and community ethics advisory committee to provide independent evidence on animal welfare science and research on community values.

INFORMATION REQUEST 5.1

The Commission is seeking feedback on:

- *the most effective governance structure for an independent body tasked with assessing and developing standards and guidelines for farm animal welfare*
- *what the body's responsibilities should include (and whether it should make decisions or recommendations and if the latter, to whom)*
- *what processes the body should use to inform and gauge community values on farm animal welfare*
- *how such a body should be funded.*

DRAFT RECOMMENDATION 5.2

State and territory governments should review their monitoring and enforcement functions for farm animal welfare and make necessary changes so that:

- there is separation between agriculture policy matters and farm animal welfare monitoring and enforcement functions
- a transparent process is in place for publicly reporting on monitoring and enforcement activities
- adequate resourcing is available to support an effective discharge of monitoring and enforcement activities.

State and territory governments should also consider recognising industry quality assurance schemes as a means of achieving compliance with farm animal welfare standards where the scheme seeks to ensure compliance (at a minimum) with standards in law, and involves independent and transparent auditing arrangements.

Access to technologies and agricultural and veterinary chemicals

DRAFT FINDING 6.1

There is no economic or health and safety justification for banning the cultivation of genetically modified (GM) organisms.

- The Office of the Gene Technology Regulator (OGTR) and Food Standards Australia New Zealand (FSANZ) assess GM organisms and foods for their effect on health, safety and the environment. Scientific evidence indicates that GM organisms and foods approved by the OGTR and FSANZ are no less safe than their non-GM counterparts.
- The successful coexistence of GM and non-GM crops is possible and has been demonstrated both in Australia and overseas. This means that if there are any market access or trade benefits (including price premiums for non-GM products), they would be achieved regardless of whether GM crops are in the market.

DRAFT RECOMMENDATION 6.1

The New South Wales, South Australian, Western Australian, Tasmanian and Australian Capital Territory governments should remove their moratoria (prohibitions) on genetically modified crops. All state and territory governments should also repeal the legislation that imposes or gives them powers to impose moratoria on the cultivation of genetically modified organisms by 2018.

The removal of the moratoria and repeal of the relevant legislation should be accompanied by the provision of accurate information about the risks and benefits to the Australian community from genetic modification technologies. State and territory governments, the Office of the Gene Technology Regulator and Food Standards Australia New Zealand should actively coordinate the provision of this information.

DRAFT RECOMMENDATION 6.2

The Australian Pesticides and Veterinary Medicines Authority should make greater use of international evidence in its assessments of agricultural and veterinary chemicals (including by placing greater reliance on assessments made by trusted comparable international regulators). Reforms currently underway in this area should be expedited.

DRAFT RECOMMENDATION 6.3

The Australian, state and territory governments should expedite the implementation of a national control-of-use regime for agricultural and veterinary chemicals (which includes increased harmonisation of off-label use provisions), with the aim of having the regime in place in all states and territories by the end of 2018.

INFORMATION REQUEST 6.1

How well does the regulatory framework for technologies and agvet chemicals perform? Are the institutional arrangements and regulatory objectives underpinning the OGTR and APVMA appropriate and up to date? What improvements could be made?

Biosecurity

INFORMATION REQUEST 7.1

Participants raised concerns about farm trespass, particularly as trespass can increase biosecurity risks. What strategies could be used to discourage farm trespass? Are existing laws for trespass sufficiently enforced in relation to farm trespass?

Transport

DRAFT FINDING 8.1

Despite the commencement of the Heavy Vehicle National Law and the establishment of the National Heavy Vehicle Regulator, there remain significant variations and inefficiencies in heavy vehicle regulation, including delays in processing road access permits.

DRAFT RECOMMENDATION 8.1

States and territories that are participating in the Heavy Vehicle National Law should increase the number of routes that are gazetted for heavy vehicle access. Permits should only be required in locations where there are significant risks to public safety or infrastructure that must be managed on a case-by-case basis.

There are arrangements in South Australia to allow road users to propose and undertake road route assessments for gazettal, and in Queensland to fund road assessments and gazettals on both state and local roads. These arrangements should be considered for adoption in other jurisdictions or expansion in respective states.

DRAFT RECOMMENDATION 8.2

The Australian, state and territory governments should pursue road reforms to improve the efficiency of road infrastructure investment and use, particularly through the introduction of road-user charging for selected roads, the creation of Road Funds, and the hypothecation of revenues in a way that incentivises the efficient supply of roads.

DRAFT RECOMMENDATION 8.3

The National Heavy Vehicle Regulator, road managers, and relevant third parties (such as utilities and railway companies) should ensure that requirements for moving oversized agricultural machinery are proportionate to the risks involved. To achieve this they should, wherever possible, make greater use of gazettal notices or other exemptions for oversized agricultural machinery, and issue permits for oversized agricultural machinery that are valid for longer periods and/or for multiple journeys.

DRAFT FINDING 8.2

The road safety remuneration system (including the Road Safety Remuneration Tribunal) imposed costs on businesses, including farm businesses, without commensurate safety benefits and its abolition will reduce this burden.

DRAFT RECOMMENDATION 8.4

The Australian, state and territory governments should review the National Heavy Vehicle Regulator (NHVR) as part of the planned review of the national transport regulation reforms. The review should fully assess concerns over inefficiencies in heavy vehicle regulations, and identify ways in which new funds allocated following the abolition of the Road Safety Remuneration Tribunal could best be used by the NHVR to improve road safety in all states and territories.

DRAFT FINDING 8.3

Privatisation of major ports has the potential to increase economic efficiency, provided appropriate processes are followed to ensure that the public interest is protected through structural separation, regulation or sale conditions. Increasing the sale price of ports by conferring monopoly rights on buyers is not in the public interest.

DRAFT RECOMMENDATION 8.5

The Australian Government should amend coastal shipping laws by 2018 to substantially reduce barriers to entry for foreign vessels, in order to improve competition in coastal shipping services.

DRAFT RECOMMENDATION 8.6

Arrangements to support the biofuel industry — including excise arrangements and ethanol mandates — deliver negligible environmental benefits and impose unnecessary costs on farmers and the community. The Australian, New South Wales and Queensland Governments should remove these arrangements by the end of 2018.

Food regulation

INFORMATION REQUEST 9.1

The Commission is seeking information on whether the new country-of-origin labelling system would deliver higher net benefits to the community as a voluntary system rather than as a mandatory system.

DRAFT RECOMMENDATION 9.1

Food Standards Australia New Zealand should remove the requirement in the Food Standards Code to label genetically modified foods.

DRAFT RECOMMENDATION 9.2

Food Standards Australia New Zealand should review the standard for the level of gluten allowed in foods labelled as 'gluten-free', taking into account scientific evidence, international standards and risks to human health, and set a maximum allowable parts per million level for foods to be labelled 'gluten-free'.

INFORMATION REQUEST 9.2

The Commission is seeking information on the costs and benefits of egg stamping relative to alternative traceability systems for eggs (such as labelling on egg cartons and requiring food businesses to keep records). Are there examples where the source of an outbreak of salmonellosis caused by eggs could not have been traced in the absence of egg stamping?

INFORMATION REQUEST 9.3

The Commission is seeking information on whether there are opportunities to further reduce the burden of regulatory food safety audits while still achieving regulatory objectives, and if so, where these opportunities lie.

Competition regulation

DRAFT RECOMMENDATION 11.1

The New South Wales Government should repeal the *Rice Marketing Act 1983.*

DRAFT FINDING 11.1

Statutory marketing of potatoes in Western Australia has reduced consumer choice and increased the price of potatoes in Western Australia. The Western Australian Government's plan to deregulate the industry will allow potato production in that state to respond to changing consumer preferences and reduce the cost of potatoes for consumers.

DRAFT RECOMMENDATION 11.2

The Queensland Government should repeal the amendments made by the *Sugar Industry (Real Choice in Marketing) Amendment Act 2015*.

DRAFT FINDING 11.2

Existing competition regulation and oversight is adequate for managing the risk of supermarkets abusing market power in their dealings with farm businesses and wholesale merchants.

Suggestions to amend exemptions that allow collective bargaining under section 45 of the *Competition and Consumer Act 2010* (Cwlth) are unlikely to increase collective bargaining by farm businesses.

Foreign investment in agriculture

DRAFT RECOMMENDATION 12.1

The Australian Government should increase the screening thresholds for examination of foreign investments in agricultural land and agribusinesses by the Foreign Investment Review Board to $252 million (indexed annually and not cumulative).

DRAFT RECOMMENDATION 12.2

The Australian Government should set application fees for foreign investment proposals at the level that recovers the costs incurred by the Foreign Investment Review Board in reviewing proposals, and should closely monitor the fees to ensure no over- or under-recovery of costs.

The way forward

INFORMATION REQUEST 14.1

The Commission is seeking feedback on possible strategies and governance arrangements for improving the incentives for policy makers to use regulatory impact assessment processes as an analytical tool to support the quality of regulation making, rather than as a legitimising tool or compliance exercise.

1 About this inquiry

This inquiry is about regulation that affects farm businesses.

The Australian Government asked the Productivity Commission to identify regulations that impose an unnecessary burden on farm businesses, with a focus on those regulations that have a *material impact* on the competitiveness and productivity of Australian agriculture. And, where there are legitimate policy goals underlying the regulation, to look at whether there is scope to achieve the regulatory objectives in a more efficient way.

Regulation can benefit farm businesses (and the community more broadly) where it meets economic, social or environmental objectives. Although by design regulation imposes costs on those affected, the benefits of well-designed and -implemented regulation would be expected to outweigh the costs to the community as a whole. Good regulation should also achieve its stated policy objectives at least cost to the community.

Why regulatory burden matters

Regulatory burden matters because it can weigh heavily on farm businesses and undermine the agricultural sector's productivity and competitiveness. As the Australian Bureau of Agricultural and Resource Economics and Sciences said:

> Although some regulations benefit farmers, other regulations, which are unnecessarily burdensome, complex or redundant, can constrain productivity growth and impose heavy costs on farm businesses. (Gray, Oss-Emer and Sheng 2014, p. 31)

The National Farmers' Federation also said:

> The opportunities for the agricultural sector in the coming years have been well documented through Government initiatives such as the *National Food Plan* and the recent *Agricultural Competitiveness White Paper*, along with industry reports such as the *Blueprint for Australian Agriculture*. Despite this, the sector is being limited in its efforts to seize these opportunities through a tangle of complex regulations which increase costs to industry and government, and limit our competitiveness as individual businesses and a nation as a whole. (sub. 61, p. 6)

For farm businesses, reducing the regulatory burden can mean less time spent dealing with regulation and more time spent on productivity-enhancing activities. The Australian Dairy Farmers said:

> When regulation is unnecessary, it often adds an avoidable cost to dairy farmers, which has to be absorbed by the business. This can have the effect of constraining growth or limiting a farmers' ability to allocate funds to necessary aspects of the business. (sub. 63, p. 2)

For the community, less regulatory burden on businesses can mean lower prices (because farmers face lower costs), fewer taxpayer dollars spent on regulation and improved living standards.

Improving the efficiency and effectiveness of the regulatory environment is important for all sectors of the Australian economy, but particularly for the agricultural sector given its high dependence on international markets — about two-thirds of Australia's agricultural production is exported (box 1.1) (DFAT 2015c). Dependence on international markets is also expected to increase as the global market for food and fibres expands (Australian Government 2015a; Gray, Oss-Emer and Sheng 2014).

Exporters of many agricultural products (such as beef, wheat and wool) are price takers in global markets. This reduces their capacity to absorb or pass on costs to consumers, which means that regulatory burdens can weigh heavily on their competitiveness (Grafton, Mullen and Williams 2015). The Tasmanian Farmers and Graziers Association said:

> We are continually told that farmers must operate in a global market — and we do. That means our prices are set by factors well beyond our control; and we have limited capacity to claw back more of the retail dollar to cover increasing on-farm costs. (sub. 16 , p. 3)

Also, most Australian farms are small businesses (box 1.1), and regulatory burdens can have a significant and disproportionate impact on small businesses. There are two main reasons for this:

- where there are fixed compliance costs (such as learning about the regulations and establishing systems to comply with regulations) small businesses typically have a narrower revenue base over which to spread these fixed costs
- small businesses often do not have specialised staff to handle regulatory matters and complying with regulations means managers are diverted from other farm business activities.

As AgForce said:

> The large majority of broadacre livestock and grain enterprises in Queensland are small businesses … and the majority of these businesses are operated without any employees, particularly for specialist beef and livestock-grain operations. As a result, many producers lack the time and financial resources to stay abreast of their many responsibilities and incorporate ongoing regulatory changes. (sub. 17, p. 2)

Box 1.1 **Some facts about Australia's agricultural sector**

- Australia's agricultural sector is diverse, with a range of agro-ecological zones and products including meat and poultry, grains, horticulture, milk and wool.
- Australian farmers export about two-thirds of what they grow and produce. In 2014-15, the value of agricultural exports was about $44 billion, with a rising share going to Asian countries (about 60 per cent in 2013-14).
- Australian farms vary in size, ranging from small family-owned/operated businesses to large agricultural corporations, but most Australian farms are small (measured by turnover) — just over half had an estimated value of agricultural operations of less than $100 000 in 2010-11. In 2014-15, there were about 123 000 businesses mainly engaged in agricultural production employing about 275 000 people.
- The largest 10 per cent of businesses (with receipts greater than $1 million) account for 49 per cent of total broadacre output, while the smallest 52 per cent (with receipts less than $200 000) account for about 15 per cent of total output.
- Over the past three decades, the sector's share of both GDP and employment has fallen from about 5 per cent to about 2 per cent. In 2014-15, the gross value of Australian farm production was about $55 billion.
- Multifactor productivity growth for the agricultural sector has averaged about 2 per cent per year over the past three decades, although it has slowed in recent years.
- Farmers own or manage about half of Australia's land mass and agriculture is responsible for about two thirds of Australia's water use.

Sources: ABS (2012, 2014a, 2015b, 2015e, 2015h, 2015i, 2015j, 2016f); ABARES (2016a, 2016b); ACIL Allen Consulting (2014); Gooday (2015); NRAC (2012).

1.1 What has the Commission been asked to do?

The terms of reference for this inquiry (set out at the beginning of this report) ask the Commission to:

- identify specific areas of regulation that are unnecessarily burdensome, complex or redundant
- identify unnecessary restrictions on competition
- assess whether the current level at which matters are regulated is appropriate and if better coordination across governments would reduce unnecessary overlap
- have particular regard to areas where there is greatest scope to reduce unnecessary regulatory burden and pursue regulatory objectives in a more efficient (least cost) way
- identify priority areas for regulatory reform
- provide recommendations to alleviate regulatory burdens identified.

The scope of the inquiry

For the purpose of this inquiry, 'regulation' is defined as any laws or other government rules (such as standards and codes of conduct) that influence or control the way people and businesses behave.

Regulations at all three levels of government that have a material impact on farm businesses are considered in this inquiry. Regulations imposed along the supply chain (including regulations introduced to meet the requirements of international markets) are also examined.

Areas not in scope include:

- related but distinct primary sectors, including fisheries and forestry — regulatory issues affecting marine fisheries and aquaculture are being investigated as part of a separate Commission inquiry
- non-regulatory policies (subsidies, taxation and infrastructure) — these are potentially important for improving the productivity and competitiveness of the agricultural sector but are not regulatory in nature.

This inquiry only examines water-related regulations that are having a material impact on the productivity and competitiveness of farm businesses. The Commission has recently taken over the review functions of the former National Water Commission. The Commission will be conducting inquiries on the progress of the National Water Initiative and on the Murray Darling Basin plan and water resources plans.

1.2 Our approach to reviewing regulation

A key question for this inquiry is whether regulation, and the way it is implemented, imposes an *unnecessary* regulatory burden. An unnecessary regulatory burden exists when it is possible to achieve the objective of the regulation at a lower cost (including compliance and administrative costs and less distortion to the economy).

Some of the ways in which unnecessary burdens can arise include:

- poorly targeted or excessive regulatory coverage — where the regulation covers more activities than was intended or warranted, or where the reach of regulation has become more extensive over time
- overly complex or prescriptive measures which reduce the flexibility of regulators and those regulated to respond to changing circumstances
- redundant regulation — well-designed and implemented regulation can become ineffective or unnecessary with changes in circumstances or technology
- excessive reporting or recording requirements, including information required from different levels of government

- heavy-handed regulators (such as overly frequent inspections)
- inconsistent or overlapping reporting requirements, either within government or across jurisdictions, which can generate confusion and extra work for businesses (PC 2007, 2011c).

Regulations with sound objectives can also sometimes have unintended effects and can cause businesses to adjust their production decisions and processes. They may also inhibit innovation and competition or reduce incentives to improve productivity.

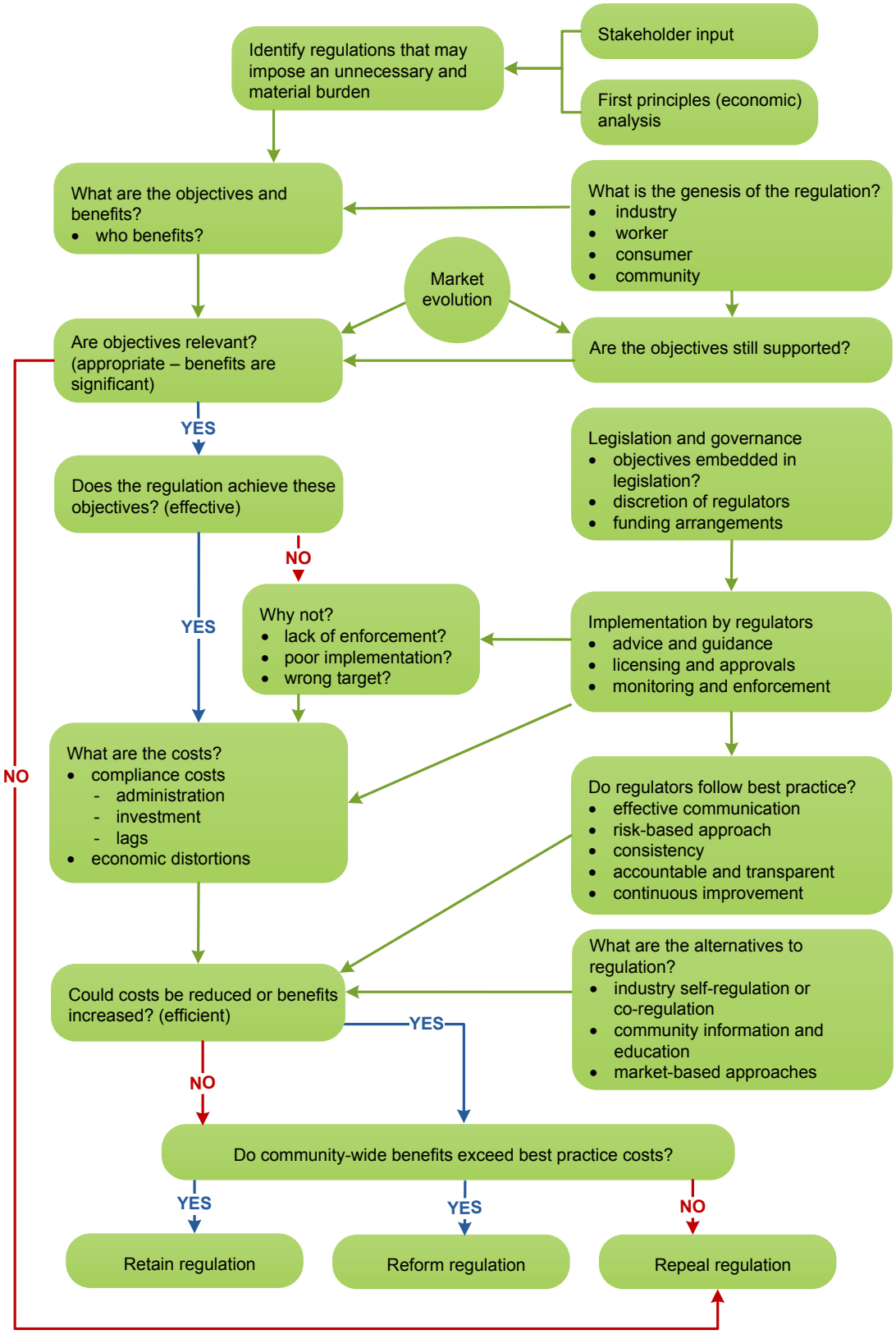
To identify regulations that impose unnecessary regulatory burdens on the agricultural sector, the Commission asked four questions (figure 1.1).

- What are the objectives of the regulation?
- Are the objectives of the regulation clear and relevant (that is, do the objectives address an economic, social or environmental problem)?
- Does the regulation achieve these objectives (is it effective)?
- Could the costs of the regulation be reduced or the benefits increased (is there a more efficient way to achieve the same objective)?

Given the breadth (and depth) of the regulatory environment, the Commission was greatly assisted by inquiry participants identifying areas of regulation where regulatory burdens are excessive. Suggestions for reform were assessed in terms of their potential to yield net benefits to the community.

With only limited quantitative evidence on the costs of regulations (section 1.4), the materiality of regulatory burdens is determined based on judgments about the potential gains to the Australian community from removing or amending regulations. Other factors taken into account include the number of businesses and consumers affected (directly and indirectly) and whether the regulation spans multiple jurisdictions or agricultural industries.

Figure 1.1 **A framework for reviewing existing regulation**



1.3 There are regulations at every stage of the agricultural supply chain

At each stage of the agricultural supply chain there are regulations in place, including for land acquisition and preparation, capital and labour use, transport of inputs and outputs, marketing and product sales (table 1.1). As the National Farmers' Federation said:

> The types of regulation impacting farm business are diverse and come from many sources. (sub. 61, p. 7)

The NSW Farmers' Association also commented that:

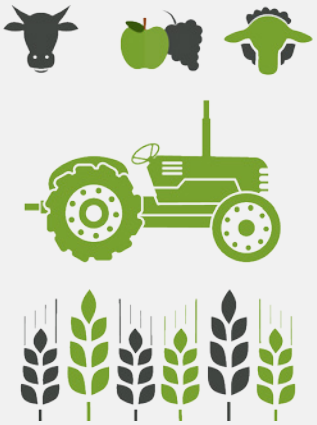
> As small business operators, farmers are exposed to a range of regulatory mechanisms. In addition, as landholders they must also comply with numerous environmental requirements, and as food producers there are a number of food safety standards that they must meet. (sub. 72, p. 6)

All levels of government impose regulations that affect the agricultural sector.

- The Australian Government is mainly involved in regulating national and interjurisdictional issues, including biosecurity and access to agricultural and veterinary chemicals. The Department of Agriculture and Water Resources is responsible for about 90 non-fisheries related Acts. This is a small proportion of the regulations affecting farm businesses. Others include those from the environment, treasury, immigration, infrastructure and industry portfolios. Most of the concerns about regulatory burdens were about regulations that are not specific to the agricultural sector.
- State and territory governments administer regulations including in the areas of road transport, environmental protection, native vegetation management, land tenure and land use. As an indicator of the extent of regulation at the state and territory level, AgForce said that in Queensland, agriculture was affected by over 75 Acts and regulations covering 17 590 pages (sub. 17, p. 2).
- Local governments implement regulations (often on behalf of state and territory governments) in the areas of land use, planning and (in some cases) environmental protection, as well as setting conditions for local road access by heavy vehicles and farm machinery (Agriculture Victoria 2015; MAV 2016; NSW EPA 2015).

Regulations covering some areas, such as aspects of environmental protection, are covered by all three levels of government. There are also other regulations, such as those relating to water use and temporary labour from overseas, that affect a range of businesses across the economy, but are of particular concern to some farm businesses.

Table 1.1 **Regulation across the agricultural supply chain[a,b]**

Key Australian Government involvement/regulation	*Key stages of the agricultural cycle*	*Key state/territory government involvement/regulation*
• native title • environmental protection – biodiversity conservation – natural, cultural and world heritage – climate change	Acquisition, leasing and preparation of land 	• land tenure and use – *land use planning* – *building regulations* – *pastoral leases* • environmental protection – *native vegetation* – *natural and cultural heritage*
• biosecurity – pest surveillance • export control • environmental protection – biodiversity conservation – natural, cultural and world heritage – climate change – national pollutant inventory • national land transport regulatory frameworks • water access and regulation • welfare of exported animals	Agricultural production and on-farm processing 	• agricultural and veterinary chemicals • animal welfare • biosecurity – *pest and disease control and response* • food certification for export • *building regulations* • genetically modified crops • land use planning • livestock regulation and identification • transport – *road access* – *transport and use of machinery* – vehicle and machinery licensing • water access and regulation
• biosecurity – pest surveillance • export control • national land transport regulatory frameworks • shipping and maritime safety laws • welfare of exported animals	Transport and logistics 	• transport regulations – *road access* – *transport and use of machinery* – vehicle and machinery licensing • animal welfare • livestock regulation and identification
• food labelling • food standards • biosecurity – pest surveillance • export control • welfare of exported animals	Marketing 	• *food safety* • food packaging • biosecurity – pest and disease control and response • food certification for export

[a] *Italics* denote local government responsibility in at least one jurisdiction. [b] There are also a range of issues and regulations that affect all stages of the agricultural supply chain. Cross-cutting issues include investment opportunities and access to capital, as well as regulations relating to competition, foreign investment, immigration, industrial relations, work health and safety, and taxation.

1.4 Benefits and costs of regulation are acknowledged

The agricultural sector openly acknowledged that regulation is critical to its ability to function effectively (box 1.2). The National Farmers' Federation, for example, said it:

> … acknowledges the need for effective regulation. Often regulation provides important protections for the business owners, workers, and the community, and sets a minimum level of performance required to meet community standards and expectations. (sub. 61, p. 6)

Australia's biosecurity regulatory arrangements are also highlighted as providing a reputational advantage to Australian farmers and access to premium export markets. Australian Pork Limited, for example, said:

> Australia's favourable biosecurity status enables it to produce premium agricultural goods competitively, efficiently and sustainably. Current biosecurity protocols make Australia one of only a few countries that maintains a high disease-free status for pig herds. (sub 36, p. 4)

Box 1.2 Inquiry participants recognise the benefits of regulation

NSW Farmers' Association suggested that:

> While there is often a negative interpretation given to regulatory burden, the Association recognises that many rules and regulations are necessary for the effective operation of business. The task for government is to ensure that regulations foster effective operation and do not compromise the competitiveness of Australian businesses. (sub. 72, p. 6)

AusBiotech said that its members:

> … recognise that the application of good regulation is critical to build confidence and certainty; it underpins public investment and ensures the competitiveness of Australian agriculture. Ambiguous or absent regulation elevates risk and is a strong barrier to innovation and as a result undermines economic benefit. (sub. 20, p. 2)

Voice of Horticulture recognises that:

> … regulation can be of benefit to horticulture where it meets economic, social and/or environmental objectives and is designed and implemented efficiently and effectively. (sub. 42, p. 1)

Australian Chicken Growers Council stated that:

> Food safety is critical to the chicken industry, and regulation in this area is necessary to protect consumers and also the reputation of the product and the industry itself. (sub. 51, p. 6)

EDOs of Australia said that:

> Environmental laws exist to protect the environment and conserve natural resources in the public interest, for the benefit of all Australians, including farmers. (sub. 60, p. 4)

Vegan Australia submitted that:

> Animal welfare regulations are in place to ensure that community expectations for the humane treatment of animals are met. (sub. 25, p. 2)

However, inquiry participants also identified regulations that impose unnecessary compliance and administrative costs on farm businesses and that reduce flexibility,

discourage innovation and restrict the use of more efficient production techniques. The Queensland Farmers' Federation, for example, said:

> We remain concerned … that the current excessive amount of regulation acts as a hindrance to productivity and stifles innovation. (sub. 32, p. 2)

National Farmers' Federation also said:

> Each day farm businesses battle through a myriad of burdensome, complex and duplicative regulations which make it difficult for farmers to ensure Australia has an ongoing, reliable and sustainable source of domestically produced food and fibre. (sub. 61, p. 7)

The West Australian Pork Producers Association noted that:

> Over time … the amount of regulation and cross-over between agencies has reached a tipping point where there are incessant calls for reducing 'red tape'. Producers are frequently frustrated by the protracted processes they are confronted with when they want to expand or improve productivity through innovation. Some of these regulations have created uncertainty for investors, over-cautious decision making and excessive time-frames. (sub. 24, p. 3)

The cumulative burden of regulation provoked the most comment in consultations conducted on this inquiry. AgForce said:

> The regulatory burden within Australian agriculture is effectively a cumulative one; resulting from the impact of many individual regulations of which each regulation, seen in isolation, does not appear to represent a significant imposition. (sub. 17, p. 2)

Tasmanian Farmers and Graziers Association also said:

> It is only when we have the accumulated burden of federal, state, local government and regional council associations that we begin to understand that with four or more layers of competing and often contradictory regulation it becomes near impossible to find an economical way through. When coupled with seemingly minor regulatory imposts, the competitive burden can become overwhelming. The malaise of regulation often leads to developments not proceeding on the basis that it is all too hard. (sub. 16, p. 2)

The cumulative burden of regulation reflects the diversity of farm activities and the degree to which these activities are regulated. The time and effort required to keep track of regulation also expands when activities or issues are regulated by multiple agencies in different jurisdictions, and when regulations are subject to ongoing change. What this suggests is that reducing even relatively small regulatory burdens could make a difference to farmers.

The cumulative burden can also be compounded when regulatory demands coincide with each other or with the operational pressures of the farm business. The Australian Bureau of Statistics, commenting on the burden of responding to surveys, noted that:

> Stakeholders indicated that there were a number of factors contributing to this survey burden – including: the sheer volume of survey requests farmers receive from multiple organisations (both government and industry); the time required to provide a response, which many found too

short; the timing of the surveys, particularly where these are received at times of peak business activity; and the cumulative impact of all of those factors. (sub. 59, p. 1)

Previous reviews found a heavy burden of regulation

In 2007, the Commission examined regulatory burdens on the primary sector (covering agriculture, aquaculture, forestry, fishing, mineral exploration and mining, and oil and gas exploration and extraction). The Commission found that from the perspective of farmers, mining companies and other primary sector businesses, governments imposed a heavy burden of regulation and a number of recommendations were made to remove or reduce regulation (PC 2007).

In 2013, the Australian Bureau of Agricultural and Resource Economics and Sciences also released the findings of a review of selected regulatory burdens on agricultural and forestry businesses (Gibbs, Harris-Adams and Davidson 2013). The review found that the Australian Government could take action to reduce the unnecessary burden in eight of the of the 32 issues investigated and that for a further four issues there was scope for the Australian Government to address cross-jurisdictional issues.

A number of studies have attempted to quantify the regulatory burden facing Australian farmers (box 1.3). For example, the National Farmers' Federation commissioned work that found for the period 2007 to 2013, grazing farms spent an average of $24 625 and 16 days per year performing tasks relating to regulatory compliance, while mixed farms spent $43 935 and 29 days per year**.**

A survey of Tasmanian businesses in agriculture, forestry and fishing industries also found that businesses that employ staff spent almost 20 hours a week meeting regulatory requirements. More recently, ProAnd Associates estimated that regulatory costs for beef producers were equivalent to about 10-15 per cent of total revenue, while for sheep producers the figure was 16 per cent (box 1.3).

However, it is important to note that these estimates of regulatory burden do not necessarily equate to 'unnecessary' regulatory burdens because:

- the costs calculated were only those which relate to the business administration of regulation ('red tape'). Other costs incurred by government or relating to the economic distortion of the regulation were not considered
- not all the costs in the estimates were regulatory costs (such as industry-imposed costs and labour-related costs)
- all administrative costs of regulation were included rather than those that were unnecessary.

That said, quantifying the costs of unnecessary regulatory burdens is not easy. This is in part because some compliance activities are unavoidable or would have been undertaken by businesses in the absence of regulation.

Box 1.3 Estimating the regulatory burden

ProAnd Associates (2016) *Regulatory costs in the red meat and livestock industries*

This study identified major regulatory costs for different types of businesses in the red meat and livestock industries. These costs included:

- items identified or underpinned in legislation affecting the red meat and livestock industries
- costs to others that are passed on to enterprises in the red meat sector
- non-legislated industry initiatives, whose roles would otherwise be filled by regulation
- industry-imposed costs such as Meat and Livestock Australia marketing and research and development levies
- on-costs, payroll tax, superannuation, training and recruitment costs, leave entitlements, workers' compensation costs and occupational health and safety
- bank charges, utilities and fuel.

For the year 2014-15, regulatory costs were estimated to be about 10-15 per cent of total revenue for beef producers, 16 per cent for sheep producers, and about 4 per cent for the feedlot sector.

Stenning & Associates (2013) *Measuring red tape: understanding the compliance burden on Tasmanian businesses*

This report used a survey-based method to quantify various regulatory costs incurred by Tasmanian businesses, including:

- time spent on regulatory compliance
- the cost of external assistance to meet regulatory requirements
- delay costs.

For the agriculture, forestry and fishing industry, it was estimated that businesses that employ staff spent 19.9 hours per week meeting regulatory requirements, whereas businesses that did not employ staff spent 3.2 hours per week.

Holmes Sackett (2014) *A snapshot of the red tape costs on farms in Australia*

This study estimated the cost of complying with regulatory requirements, including:

- overhead expenses, which relate to whole farm management and cannot be attributed to any specific enterprise
- the time cost required for completing red tape related tasks.

This study estimated that grazing farms spent an average of $24 625 and 16 days per year performing tasks relating to regulatory compliance, while mixed farms spent $43 935 and 29 days per year.

Sources: Holmes Sackett (2014); ProAnd Associates (2016); TDPIPWE (sub. 62, att. 1).

1.5 Conduct of the inquiry

The terms of reference for this inquiry was received from the Treasurer on 30 November 2015. To help interested parties to prepare submissions, the Commission released an issues paper on 22 December 2015. The Commission received 92 submissions in response to the inquiry's issues paper. A full list of those who have made submissions and/or participated in discussions is contained in appendix A. Submissions are available on the Commission's website.

The Commission held informal consultations with farmers and peak industry groups in the agricultural sector as well as with Australian and state government agencies, academics and other interested parties. The Commission also undertook case studies involving semi-structured interviews with farm businesses in northern New South Wales and southern Queensland (appendix C).

Further opportunities for participation by stakeholders

This report is a draft and further participant feedback is sought to assist in preparing the final report. The Commission will conduct hearings in capital cities and regional centres during the two weeks commencing 16 August 2016. This will include hearings in Melbourne, Perth, Sydney, Canberra, Brisbane, Wagga Wagga, Toowoomba and Townsville. The Commission also invites submissions on the draft report. Participants should provide evidence to support their views, including data and specific examples where possible. Submissions should be provided to the Commission by 18 August 2016 for consideration in the final report.

2 Land use regulation

Key points

- Land use and access is essential for agricultural production. The challenge of land use regulation is to promote efficient land use by striking the right balance between different uses (including agriculture, residential and resource exploitation) and different objectives (such as economic development and conservation).
- Pastoral leases offer less security of tenure than freehold land, creating uncertainty for leaseholders and investors, which can deter investment.
- Restrictions on the use of Crown land hamper the ability of farmers to flexibly respond to environmental, economic and other factors.
- Reforms from recent reviews on Crown land and pastoral leases have the potential to improve security of tenure and land use flexibility for leaseholders and promote the efficient use of, and investment in, land.
  - Restrictions on land use should be removed from pastoral leases and land management objectives should be implemented directly through land use regulation.
  - Prima facie, the conversion of pastoral leases to freehold land will encourage investment and allow land to be put to its highest value use, although there may sometimes be a case for Crown ownership of land.
  - In general, where reforms to Crown land confer additional property rights on a landholder, that landholder should pay the higher value of the land and any costs associated with the change.
- There is a role for government in promoting the efficient allocation of land rights and the timely resolution of conflicts. However, policies that seek to protect existing land uses as an *a priori* objective are likely to be at a net cost to the community.
  - Conflicts between residential and agricultural land uses should be managed directly through planning regulations, rather than indirectly through 'right to farm' laws.
  - Granting farmers a right of veto over land access by resource companies introduces additional transaction costs to the allocation of mineral rights and is not consistent with facilitating efficient land use.
- Planning and zoning regulations represent a significant source of unnecessary burdens for farmers. The adoption of recommendations from recent reviews of these regulations has been patchy and slow. Regulations often fail to meet their objectives because they are not sufficiently adaptable or targeted for managing agricultural land uses. In many cases, these problems could be addressed by ensuring that regulation is 'fit for purpose' and adopting outcomes-based regulation.

Land is essential for agricultural production. The majority of farming activity in Australia is land based and many farm businesses rely on use of and access to land assets. For many farmers, farming land is not only their place of business, but also their home.

Farmers are facing increasing pressures to find more productive and innovative ways to use their land in order to keep up with the demand for agricultural products. In part, this stems from the fixed stock of land available for agriculture in Australia — about half of Australia's land is used for agricultural production, with the overwhelming majority of agricultural land used for grazing (table 2.1). The availability of land for agriculture is unlikely to increase over time given increasing competition from other land users, and as a result of land degradation, climate change and water availability (DAFF 2012).

Table 2.1 **Catchment scale land use in Australia**
As at March 2015

Land use	*Area (hectares)*	*Area (per cent)*
Grazing native vegetation	455 242 289	59.24
Conservation and natural environments	204 982 290	26.67
Dryland cropping	37 947 962	4.94
Grazing modified pastures	36 799 647	4.79
Production forestry	9 977 562	1.30
Water	9 131 283	1.19
Urban intensive uses	3 668 017	0.48
Irrigated cropping	2 483 108	0.32
Plantation forestry	2 037 523	0.27
Mining and waste	2 029 930	0.26
Rural residential and farm infrastructure	1 678 666	0.22
Irrigated pastures	1 123 812	0.15
Irrigated horticulture	546 316	0.07
Land in transition	433 413	0.06
Intensive animal and plant production	208 381	0.03
Dryland horticulture	151 816	0.02
Total	**768 442 015**	**100.00**

Source: ABARES (2015b).

At the same time, land use by the agricultural sector has come under greater scrutiny from the community, driven by:

- changing patterns of settlement, including increasing residential populations in city fringe (peri-urban) areas that historically were used for agricultural production
- the adoption of intensive farming practices, which can affect the amenity of nearby residential areas
- heightened community concerns about the environmental and animal welfare impacts of farming practices.

These factors have put increased pressure on regulators to intervene in land use conflicts. This includes calls for governments to curtail particular land use activities (such as intensive farming) or to protect incumbent land use activities, including through 'right to farm' laws and a right of veto over resource exploration on farming land.

Effective land use regulation is critical to ensuring that land is put to its highest value use, for the benefit of the community as a whole. The highest value use for land varies case by case and, in some instances, not using the land could be most efficient. Due to Australia's geography, much of its land is likely to be best suited to farming or grazing.

The challenge for regulators is to manage the tensions between competing demands for land in a way that facilitates the allocation of land to its highest value use. This includes balancing land use and development against other considerations such as the environment and native title interests. It also encompasses resolving conflicts between competing land uses, such as agricultural production, resource exploration and residential areas.

This chapter looks at the role of government in land use (section 2.1) and briefly outlines current land use regulations (section 2.2). It then examines the regulatory burdens associated with land use for farm businesses, including those relating to:

- agriculture on Crown lands, in particular pastoral lease arrangements (section 2.3)
- land use conflicts between residential and agricultural developments (section 2.4)
- land access conflicts between resource and agricultural sectors (section 2.5)
- planning, zoning and development assessment processes (section 2.6).

Many of the unnecessary regulatory burdens identified in this chapter can be mitigated by governments ensuring that land use regulations:

- are fit for purpose and directly address the regulatory problem
- minimise transaction costs associated with land use dealings
- allocate landholding costs on a 'user pays' basis.

2.1 The role of government in land use

Land rights are an intrinsically legal construction that rely on government for their recognition and enforcement. When property rights are clear, secure and can be traded freely, they will usually be acquired by those willing to pay the most for them. This, in principle, allows land to be put to its most valuable use (maximising community welfare).

However, private ownership of land or the private exercise of land rights can sometimes lead to inefficient outcomes and there may be a case for government intervention.

- The use of land can have spillovers that affect third parties (Rama et al. 2012). As an example, the operation of a feedlot can produce noise and odours that reduce the

amenity of nearby residential areas (a cost unlikely to be taken into account by the feedlot operator). Regulation can be used to manage this type of 'externality'.

- Efficient agglomeration (or clustering) of similar land uses may not occur without some form of intervention. Regulation to facilitate agglomeration can result in positive externalities beyond the benefit received by the individual landholder. Examples include transport efficiencies, knowledge spillovers and labour pooling (Krugman, Obstfeld and Melitz 2015).
- In some cases, land assets can be overexploited (in the case of common resources, such as forests) or under-provisioned (in the case of public goods, such as biodiversity values). Regulation can be used to manage the use of common resources and the provision of public goods. For example, development approval processes can help protect native vegetation and biodiversity values, and preserve areas of environmental and cultural significance.

Regulation can also be used to help manage competing uses and users of land (where the benefits outweigh the costs to the community). This can be done by assigning land to a particular use (for example, through land use planning regimes) or facilitating the colocation of different types of land uses (for example, pastoral leases and native title rights can coexist on the same piece of land).

2.2 How is land use regulated?

Broadly speaking, private interests (including of farmers) in land can be held as freehold, leasehold, or native title (box 2.1). The property rights conferred by these different forms of land tenure are often described as conferring a 'bundle of rights' on the title holder, and can include the right to use, transfer, manage or possess land (Honore 1961). The precise content of the rights conferred depends on the nature of the land interest in question, and specific legislation or regulations can modify the rights and responsibilities that accrue from holding title in land. For example, environmental and planning laws may restrict a landholder's ability to undertake certain activities or developments on their land.

The responsibility for land use regulation is shared between state and territory and local governments. Land use regulation varies across jurisdictions, but each is underpinned by a land use planning regime that provides an overarching scheme for land use management, and broadly comprises:

- *legislation*, which includes state and territory Acts governing planning, zoning, development assessments and the environment
- *statewide and regional plans, strategies and policies*, which set out objectives and actions relating to the use, development, and protection of land
- *local planning schemes*, which involve land use zoning and development standards, as well as local strategic plans and planning overlays, which are required to be consistent with state policies and guidelines (PC 2011d).

Box 2.1 Land rights in Australia

Freehold

A freehold (or fee simple) estate is the most complete form of land interest that can be held by a person. It grants a perpetual interest in land and allows the estate holder to deal with the land, including selling, leasing, or mortgaging the land. However, freehold title does not grant absolute ownership of land, as the Crown may withhold certain rights (such as, in Australia, subsurface mineral and resource rights) and the estate holder must comply with laws that can restrict the way the land is used (such as planning and environment laws). Most properties in Australia are held as freehold.

Leasehold

A leasehold estate is created when Crown land is leased to a person or corporation by the government, either for a specified term or in perpetuity. Crown leases are administered at the state and territory level, meaning that leasehold arrangements vary between jurisdictions. Moreover, Crown leases in each jurisdiction are typically governed by several different regimes.

In some cases, leasing regimes are tied to the type of land to be leased. For example, in Victoria, leases of reserved forests, Crown reserves and unreserved Crown land are each managed under separate pieces of legislation. Other regimes centre on the identity of the lessee or the purpose of the lease. For example, in Western Australia, different regulatory regimes exist for pastoral leases, leases to Aboriginal parties and leases as part of the War Services Land Settlement Scheme. Some regimes are general and not restricted to certain types of land or land uses, such as Crown Leases in the Northern Territory and leases under the *Crown Land Management Act 2009* (SA).

Native title

Native title recognises the interests and rights of Indigenous people in relation to land, and can include the right to the possession, use and occupation of land or the right to access land for particular purposes. The native title rights and interests held by particular Indigenous people depend on both their traditional laws and customs, and what interests are held by others in the area concerned. Native title can coexist with other land rights, such as pastoral leases, on the same piece of land.

The nature of native title varies internationally, as a result of differences in historical, legal and other factors. For example, whereas native title in some overseas jurisdictions (such as Canada, the United States, New Zealand and Norway) is affected or influenced by constitutional or treaty recognition, this is not the case in Australia.

Other mechanisms for land access

Access to Crown land may also be granted through a licence, permit or a profit-à-prendre. In general, a licence or permit allows a person to occupy, access or use the land in a specified way. A profit-à-prendre gives the holder the right to take natural resources (such as timber and wild game) from the land. Unlike a lease, these rights do not confer an interest in the land and cannot be transferred to another party.

Sources: Australian Trade Commission (nd); Butt (2001); Dow and Gardiner-Garden (1998); Kimberley Land Council (2014); Queensland Government (2015d); VDSE (2012); WA DRDL (nd).

In addition, all jurisdictions have regulation for managing specific land use issues, including those that relate to:

- land tenure, including leases of Crown land (such as pastoral leases)
- the resolution of land use conflicts, including legislation regulating land access by resource companies.

These regulations also interact with Australian government regulation, the most prominent of these being the native title regime (box 2.2).

Box 2.2 Key native title processes

The *Native Title Act 1993* (Cwlth) allows for recognition of native title through various claims and mediation processes.

- *Native title determination*: A native title determination is a decision by the Federal Court of Australia that native title does or does not exist in relation to a particular area of land or waters.
- *Compensation*: the Federal Court of Australia may determine that native title holders have the right to be compensated because native title has been extinguished in whole or in part or because governments plan to undertake acts that extinguish native title in the future.
- *Future acts*: Activities occurring after 1 January 1994 that affect native title ('future acts') are governed by the future act regime. Future acts can include the making or amendment of legislation, or the grant or renewal of licences and permits, such as those for resource exploration and extraction. This regime specifies what future acts are permitted, the procedures to be followed before the future act can be done, the effect that the act will have on native title and whether compensation will be payable for interference with native title rights.
- *Indigenous land use agreements (ILUAs)*: An ILUA is an agreement between a native title group and others about the use and management of land and waters. ILUAs allow people to negotiate flexible and pragmatic agreements to suit their particular circumstances. An ILUA can be negotiated and registered whether there is a native title claim over the area or not. When registered, ILUAs bind all parties and all native title holders to the terms of the agreement.

Sources: Kimberley Land Council (2014); National Native Title Tribunal (2011, 2015).

2.3 Agriculture on Crown land

A significant proportion of agricultural activity takes place on land that is leased from the Crown. Across Australia, the predominant form of agricultural leasehold is pastoral leases — this is where Crown land is leased for the purpose of grazing livestock on rangelands.

Pastoral lease arrangements exist in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory. They make up approximately:

- 36 per cent of land in New South Wales

- 52 per cent of land in Queensland[2]
- 34 per cent of land in Western Australia
- 40 per cent of land in South Australia
- 45 per cent of land in the Northern Territory (Australian Government 2015d; South Australian Government, sub. 57; Queensland Government 2013b; WA DoL 2015a).

The rationale for leasehold land

Pastoral lease arrangements were initially established in the mid-18th century to manage early pastoral occupation while preserving future government options for land allocation and use (Holmes 2000; PC 2002b). Over time, the policy objectives associated with pastoral leases have shifted (box 2.3). In the past two decades, pastoral leases have been used as 'instruments for the delivery of emergent national policies on Indigenous land rights, on sustainability in resource use, on biodiversity protection, and on facilitating non-pastoral enterprises and interests' (Holmes 2014). Pastoral leases also continue to facilitate the cultural objective of retaining grazing as a form of land use.

Box 2.3 Pastoral leases and policy instruments

Since their introduction, the policy objectives associated with pastoral leases have shifted. Holmes (2000) identifies six key phases in the development of New South Wales legislation underpinning pastoral lease arrangements, with similar trends occurring in other jurisdictions.

1. 1847 – 1861: pastoral leases provided temporary low-cost access for early pastoralists while preserving future options on land allocation and use.
2. 1861 – 1884: pastoral leases were used as a means for 'unlocking the land' and facilitating closer settlement
3. 1884 – 1950s: pastoral leases were used to facilitate even closer settlement, with the sequential, managed subdivision of pastoral leases into family-sized holdings.
4. 1950s – 1970s: no clear policy function; tinkering with the system and responding to lessees' concerns about tenure upgrading; reduced rents and other concessions.
5. 1980s – 1996: pastoral leases were used as a mechanism for encouraging sustainable use and the conservation of biodiversity, with controlled public access and the emerging use of rangeland monitoring.
6. 1997 – present: pastoral lease management evolved to account for the recognition of native title claims and the practicalities of coexisting titles.

Sources: Holmes (2000); PC (2002b).

In some cases, pastoral leasehold also facilitates the colocation of native title and non-Indigenous property rights. This is because, unlike freehold land, a grant of a pastoral

[2] Includes pastoral holdings, grazing homestead perpetual leases and grazing homestead freeholding leases.

lease over Crown land does not necessarily extinguish native title (*Wik Peoples v The State of Queensland* (1996)). In this way, Crown leasehold is an essential instrument for maintaining the continued coexistence of native title rights and agriculture. However, the existence of native title may also mean that changes to existing land uses, including regulatory reform, may be constrained by native title interests. Reforms may also trigger native title processes (box 2.2). While costly, these processes are essential to ensuring that native title interests are given due weight.

Key concerns relating to pastoral lease regulation

A number of recent reviews of pastoral leases have identified issues associated with security of tenure and restrictions on the use of land under pastoral (or agricultural) lease (Australian Government 2015d; CSIRO and JCU 2013; NSW Government 2013, 2014a, 2014b, 2015b; QSDIIC 2013; WA DRDL 2011; Western Australia Public Administration Committee 2014). As a result of these reviews, a number of jurisdictions are implementing reforms to their lease arrangements (box 2.4).

Box 2.4 Recent developments in pastoral lease regulation

- In New South Wales, proposed reforms include allowing certain perpetual pastoral leases to be converted to freehold. The NSW Government has also indicated an intention to revise the list of activities permitted on pastoral leasehold land.
- In Queensland, changes to the pastoral lease regime now allow for rolling leases for grazing, agriculture and pastoral purposes for terms of up to 50 years. Other reforms include simplification of the arrangements for converting leases to freehold titles, and revised rental arrangements on term leases.
- In Western Australia, the Rangelands Reform Program has proposed the introduction of a new type of leasehold, the Rangelands Lease, which would allow land to be used for a wider range of purposes including tourism, Aboriginal land management practices, grazing, horticulture and broad scale agriculture.
- In the Northern Territory, amendments to the *Pastoral Land Act* in 2014 enabled permits to be granted for up to 30 years for non-pastoral use on less than half of all pastoral leasehold land. This includes uses such as horticulture, aquaculture, tourism and forestry.

Sources: Australian Government (2015d); NT DLRM (2015); WA DoL (2015b); Thynne Macartney (2014).

Some of the concerns identified in these reviews were echoed by participants to this inquiry, including that:

- pastoral leases offer less security of tenure than freehold land, and this creates uncertainty for leaseholders and investors (making it potentially more difficult or expensive to obtain finance)
- pastoral lease conditions restrict the use of land for non-pastoral activities and additional approvals are often required to undertake these activities.

These factors can discourage investment in land held in pastoral leasehold. In its White Paper on Developing Northern Australia, the Australian Government said:

> Much more of the land across the north can potentially be used for a variety of agriculture projects … Removing unnecessary restrictions imposed on pastoral leaseholds will help to unlock the potential of this land, to the benefit of pastoral leaseholders, including Indigenous leaseholders and the Australian economy in general. (Australian Government 2015d, p. 35)

Lack of tenure security can create uncertainty for land users

Security of land tenure is a key concern for many pastoral lease holders due to the uncertainty it creates for land users and other investors (CSIRO and JCU 2013). This concern can arise as a result of short lease terms (box 2.5). For example, while WA legislation allows for a term of up to 50 years, some leases were granted for as little as 18 years (Western Australian Government, sub. 54).

Box 2.5 Lease tenure in Australia

Across Australia, pastoral leases are issued as either term leases or perpetual leases. A term lease is a lease that is issued for a defined period of time. Term leases may be renewed or extended, although there is no guarantee that renewal or extension will be granted.

	Term lease			*Perpetual lease*
State	*Initial term*	*Renewal or extension*	*Term of renewal or extension*	*Availability*
NSW	Up to 40 years	At any time	Up to 40 years	Yes
Qld	Up to 50 years	In last fifth of lease or, for rolling leases, during the last 20 years	Up to 50 years	Yes
SA	42 years	Rolling 14 year term	14 years	No
WA	Up to 50 years	During last ten years	Up to 50 years	Proposed
NT	Up to 25 years	Before last year	Up to 25 years	Yes

The process for lease renewal or extension of term leases varies across jurisdictions. Renewal or extensions are usually subject to certain land management conditions being met by the lessee. By contrast, in South Australia, each lease is subject to assessment by the Pastoral Board every 14 years and, subject to meeting certain land management conditions, the lease is extended by 14 years to maintain the original term of 42 years.

By contrast, perpetual lease is a lease that is granted in perpetuity and therefore does not require renewal or extension, provided that lease conditions are met. Perpetual leases for pastoral purposes are not granted in all jurisdictions.

Sources: PC (2002b); Queensland Government (2015d).

Security of tenure can also be undermined by a lack of certainty about lease renewal and extensions. For example, lease renewal provisions in Western Australia and Queensland

include clauses that may allow part or all of an expiring term lease to be resumed for public purposes, such as conservation reserves.

A lack of tenure security can make long-term investment less attractive and more difficult. For example, a lessee may have less incentive to undertake a socially-beneficial long-term project if the term of the lease is shorter than the lifespan of the project. Uncertainty around lease renewal and extensions can also make it difficult for farm businesses to obtain financing (Larry Acton, sub. 55), although pastoral lease tenure per se is not an issue for most financial institutions (Western Australian Government, sub. 54). (Other factors, such as risk and the ability to repay loans, can also affect to the ability to secure funding (WA DoL 2013).)

A lack of tenure security can also have perverse effects on land management decisions and outcomes. For example, a lessee may have less incentive to manage the land if there is uncertainty about whether a lease will be renewed.

Improved security of tenure can help attract investment and increase the flow of capital into Australia's rangelands (WA DRDL 2011). There are, however, trade-offs associated with improving security of tenure for pastoralists. Long tenure periods can 'lock up' land, preventing it from being put to an alternative use that is potentially more valuable. As such, increasing the length and security of tenure could also lead to undesirable outcomes if the optimal use for a particular piece of land changes over time — for example, a piece of land that is currently used for grazing may, over time, be better suited for tourism or resource extraction.

Restrictions in pastoral leases can impede land use diversification

In general, pastoral leases require land to be used for a specific purpose, with limited scope for activities unrelated to the pastoral (or agricultural) use of land, including ecotourism and conservation. The permitted uses of land under pastoral leases in different jurisdictions are summarised in table 2.2.

Past inquiries into rangeland management have found that improved access to diversification options can help increase investment (WA DRDL 2011). That said, not all land is suitable for diversification, as land may sometimes only have one viable use.

Table 2.2 **Permitted land uses for pastoral leases**

	Pastoral[a]	*Agricultural*	*Related uses*[b]	*Other uses*
NSW: *Western Lands Act 1901*	✓	×	×	×
QLD*: Land Act 1994*	✓	✓	×	×
SA: *Pastoral Land Management and Conservation Act 1989*	✓	×	×	×
WA: *Land Administration Act 1997*	✓	×	✓	×
NT: *Pastoral Land Act 1992*	✓	×	✓	×

[a] Refers to the grazing or pasturing of stock. [b] Permits certain activities undertaken as supplementary or ancillary to the primary pastoral use, including agricultural and horticultural activities and tourism.

Sources: WA DoL (nd); PC (2002b).

Reforming pastoral leases

Recent reviews (including those outlined above in box 2.4) identified a number of reforms to improve pastoral lease arrangements. Each jurisdiction faces a unique set of considerations when regulating pastoral land, such as environmental factors and the prevalence of native title claims. As a result, regulation that is appropriate for one jurisdiction may be ill-adapted to the circumstances of another — there is no one-size-fits-all approach to reforming pastoral lease arrangements.

Extending the length of leases

Security of tenure for leaseholders could be improved by:

- extending the term of leases: in its *White Paper on Developing Northern Australia*, the Australian Government proposed increasing the term of leases to 99 years (Australian Government 2015d)
- introducing rolling leases or creating rights of renewal: recent reforms to the Queensland pastoral lease regime now allow for rolling leases for grazing, agriculture and pastoral purposes for terms of up to 50 years (Queensland Government 2015d). The Western Australian Government is also currently pursuing reforms that would 'provide pastoral lessees with certainty that their lease will be renewed for the same terms and conditions, provided lessees are able to demonstrate compliance with the terms of their pastoral lease and the Land Administration Act 1997' (Western Australian Government, sub. 54, p. 11)
- converting term lease to perpetual leases: in Western Australia, proposed amendments to the *Land Administration Act 1997* (WA) would allow lessees to apply for a pastoral lease in perpetuity (WA DRDL 2011). Similarly, in New South Wales, the Western Lands Advisory Council has deemed that 'perpetual leases are appropriate and effective in limiting damage to sensitive rangelands' (NSW Government 2014b).

The Commission supports proposed reforms that extend the terms of leases as this will increase the security of tenure for lease holders and help to facilitate investment in the agricultural sector.

Streamlining land use restrictions

A number of recent reviews at the Australian Government level have concluded that there are significant productivity gains that could be made by removing land use restrictions in pastoral leases (Australian Government 2015d; CSIRO and JCU 2013). For example, the removal of land use restrictions can increase the economic value of the land and encourage a wider range of investment in the area.

Many jurisdictions are also in the process of reforming their regulatory arrangements to allow or facilitate land use diversification, including expanding the list of activities permitted on pastoral leasehold land (box 2.4). The Commission supports efforts to remove land use restrictions in pastoral leases where practicable.

Some current restrictions, such as stocking requirements, are in place to ensure that land management objectives are met. The Commission considers that there is scope to streamline pastoral lease conditions by implementing these objectives directly through land use regulation, rather than through pastoral lease conditions. This would also improve the transparency of land use management and has the potential to reduce the cost of administering pastoral leases.

However, there may be some exceptions where it is preferable to implement conditions through the lease instrument. This includes conditions that are impractical to implement through regulation, such as where the condition is specific to a small number of leases or varies between different leases. In other instances, it may be preferable to implement a condition through the lease if doing so improves compliance or enforceability.

DRAFT RECOMMENDATION 2.1

Land management objectives should be implemented directly through land use regulation, rather than through pastoral lease conditions. State and territory governments should pursue reforms that enable the removal of restrictions on land use from pastoral leases.

Alternative forms of leasehold

One approach to facilitate non-pastoral land use is to change its tenure — that is, to convert all or part of a pastoral lease to a different form of lease, such as a Crown lease or commercial lease. The availability of different forms of lease vary between states and

territories. Jurisdictions should ensure that processes for converting a pastoral lease to other forms of tenure are not unduly burdensome.

Jurisdictions should also consider whether new or additional forms of tenure are an appropriate way of improving land use flexibility for leaseholders. For example, in Western Australia, a proposed 'rangelands lease' would allow land to be used for 'multiple and varied uses', provided that use is 'broad scale and consistent with the preservation and ongoing management of the rangelands as a resource' (WA DRDL 2011, p. 8). The new rangelands lease regime would operate alongside the pastoral lease regime.

Conversion of pastoral lease to freehold land

In some jurisdictions, leaseholders (in some instances) can apply to convert their pastoral lease to freehold land. For example, in Queensland, perpetual leaseholders (but not term leaseholders) may apply to convert their lease to freehold land (*Land Act 1994* (Qld) s. 166). In general, the purchase price is calculated on the basis of the unimproved value of the land, plus the market value of commercial timber on the land belonging to the state (Queensland Government 2016).

Respondents to the NSW Crown Lands Legislation White Paper said that pastoral leases (including term leases and perpetual leases) are disadvantageous to graziers relative to freehold land (NSW Government 2015b). In particular, the majority of Western Lands lessees who made a submission to the Crown Lands Legislation White Paper supported the conversion of perpetual leases to freehold land and some argued that developers were more reluctant to invest in leasehold land (NSW Government 2015b).

The Australian Government recently stated that 'pastoral leaseholders should have the ability to apply for broader, more secure and tradeable forms of tenure, including freehold, in a manner that complies with the Native Title Act' (Australian Government 2015d, p. 37).

On the other hand, the NSW Farmers' Association said that the majority of leaseholders in the Western Division were satisfied with leasehold tenure, especially in light of the cost of converting to freehold:

> The majority of leaseholders in the Western Division are happy with their leasehold status, but some would like more flexibility with their covenants … This cost of conversion for most grazier leases would be far greater than the cost of converting a cultivation or agricultural lease due to the sheer size of most grazier leases, which make up the majority of the Western Division in NSW. As such, the costs are likely to far outweigh the benefits of conversion in most cases. (sub. 72, p. 8)

Principles for reform to Crown Land

Reforms to Crown leases should aim to promote more efficient land use. Prima facie, the conversion of pastoral leases to freehold land will encourage investment and allow land to be put to its highest value use. However, in some instances, it may be appropriate for the Crown to retain ownership of land, including where other land interests exist or alternative future land uses are envisaged, such as native title rights or transport corridors.

Any proposed reform should only proceed if its net benefit is positive. Assessing net benefit involves weighing the benefits of reforming pastoral lease arrangements against any costs of doing so. These costs include any loss of value to other parties (including native title holders and the public) as well as any procedural and administrative costs associated with implementing those reforms (for example, resolving conflicting interests in the land). The net benefits of any particular reform will depend on the circumstances of the jurisdiction in question, including geographical factors and how property rights are currently allocated.

Reforms that allow the transfer of value from other parties to leaseholders will need to consider issues such as compensation or payment. Where a reform confers additional property rights to leaseholders, there will be a transfer from government (on behalf of society as a whole) to the leaseholders.

As a general rule, the recipient of any additional property rights should bear the opportunity cost of that allocation. This is because aligning the incidence of the costs and the benefits of property rights helps ensure that their allocation is efficient and that land is put to its highest value use. By contrast, changes to regulations or policies generally, which affect the value of existing property rights, typically do not call for compensation (PC 2001b).

This suggests that a leaseholder whose tenure is extended or converted to freehold should pay the market value for that extension or conversion. In addition, the beneficiaries of the reform should be responsible for any loss of value to other parties as well as any procedural and administrative costs associated with change:

> In principle … the beneficiary of the broader tenure should be responsible for the costs of conversion, including potential native title compensation. This ensures that moves to broader tenure happen where the economic gains are greatest and consistent with native title interests. (Australian Government 2015d, p. 38)

That said, the efficient allocation of property rights could be hindered if the prices that landholders currently face are distorted. For example, if a freehold estate can be purchased at market value, but pastoral lease rent payments are set well below market price, the incremental cost of converting to freehold will be artificially inflated. In this case, a leaseholder may be unwilling to pursue conversion even if freeholding is more efficient than leaseholding. For this reason, state and territory governments should endeavour to align rent payments with the market value of the pastoral lease.

There are, however, some challenges associated with putting this principle into practice. For example, in some instances, the market value of a lease may be difficult to determine empirically, particularly if there is insufficient information about the market or where there is only one prospective purchaser for the lease. In addition, governments will need to carefully consider how quickly to implement changes (such as phasing in changes to rent payments) and how to manage the transition process, particularly where the incumbent leaseholder's existing rent payments are significantly below market value.

DRAFT FINDING 2.1

Pastoral leases offer less security of tenure than freehold land, creating uncertainty for leaseholders and investors. In general, converting pastoral leases to freehold facilitates efficient land use.

DRAFT RECOMMENDATION 2.2

State and territory governments should:

- ensure that, where reforms to Crown lands confer additional property rights on a landholder, the landholder pays for the higher value of the land and any costs associated with the change (including administrative costs and loss of value to other parties)
- set rent payments for existing agricultural leases to reflect the market value of those leases, with appropriate transitional arrangements.

2.4 Conflicts between farming and residential land use

Over time, conflicts between agricultural and residential land uses have been heightened by rural fragmentation, subdivision and urban encroachment, particularly in peri-urban areas (NSWFA, sub. 72; QFF, sub. 32; Western Australian Government, sub. 54). These factors have led to increased conflict between primary production and residential land use over matters such as noise, smell, and use of agricultural sprays (PIRSA 2013). For example, the Australian Food and Grocery Council observed:

> Many agri-food plants operate continuously and can therefore produce noise, light, odour and heavy vehicle movements at all times of the day and night. This often results in a conflict between ongoing operation of the agri-food industry and the amenity sought by new residents. (sub. 28, p. 11)

Similarly, Canegrowers noted:

> We have instances where significant areas of land are becoming unsuitable for farming because of urban encroachment and other land use issues. Growers are continually being harassed for burning, not burning (trash), dust, chemical complaints, harvester noise etc. (sub. 22, p. 3)

Land use conflicts can also arise as a result of changes in agricultural production methods, such as intensification. Sometimes, land use conflicts are accompanied by other issues — for example, intensive farming could raise environmental concerns for nearby residents, or a hobby farm may pose a biosecurity risk for nearby farm businesses. Some examples of land use conflicts between agricultural and residential uses are discussed in box 2.6.

Box 2.6 Examples of land use conflicts

Blackmore Wagyu Farm

Established in 1998, the Blackmore Wagyu cattle farm is located in Alexandra, within the Murrindindi Shire Council in Victoria. Blackmore Wagyu's beef is exported to 20 countries and is highly acclaimed locally and internationally.

In 2011, Blackmore Wagyu abandoned the use of feedlots, in favour of grazing cattle on its 150-hectare property. As a result, neighbouring residents and businesses raised complaints about increased odours, noises and birds in the area. In response to these complaints, the Murrindindi Shire Council required Blackmore Wagyu to apply for an intensive beef husbandry permit, but ultimately denied the application for a permit. Blackmore Wagyu is currently contemplating relocating its business.

Manilla Broiler Chicken Farm

In July 2014, Tamworth Regional Council approved Baiada's $82 million development proposal for 70 broiler chicken sheds in Manilla. At peak capacity, the sheds would house almost three million chickens.

Residents in the area appealed to the New South Wales Land and Environment Court to have the approval struck down. The application cited a number of concerns, including noise, road safety, health concerns including respiratory illness, and impacts on water supplies and nearby farms. In April 2016, the Court refused the application on the basis that the development was 'acceptable on its merits', saying that concerns about emissions would be satisfactorily addressed by the proposed mitigation measures outlined in the conditions of consent.

Sources: ABC (2015a, 2015c, 2016).

How farm businesses are affected

While agricultural land use can affect the amenity of nearby residential areas, urban encroachment can also negatively impact farm businesses. For example, the Australian Chicken Meat Federation said:

> Urban and lifestyle block encroachment onto traditional (or zoned) rural areas creates significant problems for the chicken meat industry, which to remain viable needs to operate in 'clusters' of a sufficient number of growing farms supplying to a processing plant that is within a reasonable transport distance of the plant. (sub. 40, p. 4)

Some participants said that land use conflicts were often resolved in favour of residential land users (Australian Chicken Growers' Council, sub. 51; Australian Chicken Meat Federation, sub. 40; NT Farmers, sub. 8; Voice of Horticulture, sub. 42). Voice of Horticulture pointed out the following example of regulatory measures affecting output:

> Some councils, like Yarra Valley in Victoria, have imposed limits on the use of tree crop netting that is visible from roads as it is perceived to decrease the rustic amenity of day-trippers. However, netting is an essential risk mitigation measure and it is unreasonable for councils to impose these types of restriction. (sub. 42, p. 6)

However, proximity to population centres can also benefit farmers as it improves access to infrastructure, labour and amenities. As the Australian Food and Grocery Council said:

> Intensive agriculture such as feedlots and horticulture operations are often located close to population centres due to access to labour, energy (electricity, gas), water and transport links. Food processing facilities are often located close to population centres for the same reasons. (sub. 28, p. 11)

NT Farmers also noted that population growth in farming areas brought 'increased focus … on the North through initiatives such as the Federal Governments Northern Australia development agenda' (sub. 8, p. 1).

Buffers

One way of managing land use conflicts is through buffers between different land uses, in the form of separation distances or physical barriers (such as vegetation). Buffers can be used to manage a variety of land use 'spillovers', including chemical spray drift, odour, noise, dust, smoke and ash, and sediment and water run-off (QDNR and QDLGP 1997). Ordinarily, the landholder undertaking the new or encroaching land use is responsible for providing the buffer (SA EPA 2007; WA DoH 2012).

Many state and local governments have guidelines for recommended buffers, which provide technical guidance for determining the appropriate size and nature of a buffer for different types of emissions (NSW DPI 2007; QDNR and QDLGP 1997; SA EPA 2007; WA DoH 2012). However, it is not appropriate for regulation to prescribe minimum buffer requirements for all situations, so as to allow the nature, frequency and magnitude of the relevant emissions to be taken into account (Australian Food Sovereignty Alliance, sub. 27).

Buffers are not a panacea for managing land use conflicts and should be used in conjunction with other planning tools (such as land use strategies and zoning) and regulations relating to the source of the emissions (NSW DPI 2007; SA EPA 2007). This is because buffers are costly to implement (for example, separation distances can waste productive land) and may not be the most appropriate or efficient mechanism for addressing particular land use conflicts.

Right to farm laws

Where agricultural activity affects the amenity of residential areas, a private mechanism for resolving these conflicts is through civil lawsuits. A claim of nuisance, for example, could result in a farmer banned from engaging in or being required to pay damages for certain activities.

'Right to farm' laws are designed to protect farmers from nuisance complaints related to the continuance of their existing activities. Right to farm laws are prevalent in Northern America, but have not gained much traction in Australia (box 2.7). A key premise of these laws is that the value of continued agricultural production is greater than the loss of amenity caused by the nuisance. It also assumes that land use conflicts can be reduced by excluding nuisance suits.

Box 2.7 Prevalence of right to farm laws

Right to farm laws originated in the United States, with the first laws passed in 1963 in Kansas. The main purpose of these was to grant immunity to farmers from nuisance lawsuits brought by neighbours who are adversely affected by agricultural activity. By 1994, all states in the United States had enacted right to farm laws and similar laws are in place in all Canadian provinces.

Right to farm laws in Australia

In Australia, only Tasmania has right to farm legislation. Like its Northern American counterparts, the *Primary Industries Activities Protection Act 1995* (Tas) was introduced to:

> …specifically stop the common law action of nuisance being used to prevent farmers pursuing the normal, legitimate and statutorily authorised activities which form a necessary part of good agricultural practices. (TDPIPWE 2014c, p. 9)

The NSW Department of Primary Industries has recently released a *Right to Farm Policy*, which expresses support for producers' right to farm, to the extent of what is lawful, echoing the *Right to Farm Policy* put forward by the Greater Hume Shire Council in 2012.

Repealed regimes

In Western Australia, an Agricultural Practices Disputes Board was instituted by the *Agricultural Practices (Disputes) Act* 1995. The legislation was subsequently repealed due to the very limited number of disputes to resolve.

In Victoria, the *Sale of Land Act 1962* previously provided a general warning to purchasers about amenity impacts of surrounding agricultural activities. In 2014, this section was deleted, and replaced with a checklist that real estate agents must make available to buyers.

Sources: Greater Hume Shire (2012); Griffith (2015); NSW DPI (2015b); TDPIPWE (2014c).

A number of participants to this inquiry argued in favour of a right to farm (Australian Chicken Growers' Council, sub. 51; Australian Chicken Meat Federation, sub. 40; Canegrowers, sub. 22). Some participants emphasised the economic importance of farm businesses in supporting nearby residential areas. For example, the Australian Food and Grocery Council said:

> The agri-food sector is often a key employer and driver of economic activity in an area, particularly a regional area. As a key economic asset in an area, established agri-food facilities should have priority in local planning policies. (sub. 28, p. 11)

Some participants also argued that purchasers who had notice of nearby agricultural activity should be given less opportunity for complaint. The Australian Chicken Meat Federation said:

> The expectation should be that if you buy into these areas, they are for genuine agri-business, and there should be reduced opportunity for complaint against established and reasonable industry practice. (sub. 40, p. 4)

By contrast, participants to other inquiries questioned whether right to farm legislation addresses a legitimate economic, environmental or social concern, or delivers a net benefit to the community. In its submission to the review of the *Primary Industry Activities Protection Act 1995* (Tas), Environmental Defenders Office Tasmania argued that the right to farm law 'elevates the economic value of farming above all other considerations' (TEDO 2014). Prioritisation of incumbent land uses is not necessarily appropriate because 'the "appropriateness" of land use can change over time' (Western Australian Government, sub. 54, p. 5).

There is also little evidence to demonstrate the prevalence of nuisance actions resulting from land use conflicts. In its submission to the Review of the Primary Industry Activities Protection Act, the Tasmanian Environmental Defenders Office stated that it was only aware of one instance where right to farm legislation had been applied: *Williams Davies v Devonport City Council* [2002] TASRMPAT (TEDO 2014). Similarly, between 1995 and 2011, an Agricultural Practices Disputes Board was in place in Western Australia, but had very few disputes to resolve (eight in total) (Griffith 2015; NSW DPI 2015b).

It is also unclear whether restrictions on nuisance actions do in fact reduce the number of claims relating to agricultural land use conflict, given the availability of other forms of legal redress. The Tasmanian Environmental Defenders Office observed:

> Given the availability of other legal actions that are not restricted by the PIAP Act, including civil enforcement proceedings for an environmental nuisance under the Environmental Management and Pollution Control Act 1994, nuisance actions under the Local Government Act 1993 and common law trespass, it is questionable that the PIAP Act has any significant impact in reducing claims in relation to farming activities. (TEDO 2014, p. 2)

Land conflicts should be addressed through the planning system

In principle, an effective regulatory regime would see land go to its highest-value use. The highest value land use will depend on the circumstances of each case, such as the characteristics of the farm business and the residential area, and the magnitude of the nuisance. A policy that seeks to protect a certain land use by virtue of its incumbency risks generating a net cost to the community. This is especially the case if the magnitude of the nuisance changes over time (for example, due to new methods that enable an increase in the volume or intensity of production). In these instances, the highest-value land use could change.

Nuisance actions protect the 'right of private enjoyment' from disturbance from many types of land uses — including business, manufacturing and other residential uses — and there is no principled reason why agricultural activity per se should be exempted. The availability of nuisance actions also does not prevent farm businesses from negotiating with neighbouring residents to allow the nuisance to occur. This could involve negotiating compensation or measures (by either party) to mitigate the nuisance.

Jurisdictions may also wish to consider programs to educate prospective purchasers of rural living allotments about the realities of farming practices so as to avoid nuisance complaints at a later date (PIRSA 2013).

In general, regulation that directly targets the regulatory problem is preferable to regulation that indirectly implements policy objectives. This helps reduce any unintended consequences of regulation and promotes regulatory transparency. For this reason, the Commission considers that land use conflicts would be more effectively addressed through improvements to the planning system, rather than through the introduction of right to farm laws. Such improvements could include the development of clearly defined, forward looking land use plans that are tailored to different regions, which may help to manage rural fragmentation, avoid land use conflicts and mitigate the need for regulation (Griffith 2015; QFF 2015).

Similarly, where land use conflicts are accompanied by other issues (such as concerns about environmental impacts, biosecurity and animal welfare), these issues should be regulated directly, rather than through the vehicle of land use regulation.

INFORMATION REQUEST

What are the advantages and disadvantages of 'right to farm' legislation? Are there any other measures that could improve the resolution of conflicts between agricultural and residential land uses?

2.5 Conflicts over land access for resource exploration and extraction

In recent years, high global demand for resources has led resource companies, particularly gas companies, to seek access to agricultural land, sometimes in conflict with farmers.

In 2013, the COAG Standing Council on Energy and Resources endorsed the Multiple Land Use Framework as a response to current and emerging land access and land use issues. Its principles include coexistence and the maximisation of the social, economic and environmental values of land use (SCER 2013b). Although the framework specifies several guiding principles to promote a consistent approach to planning and policy development by state and territory governments, it is 'at the complete discretion of jurisdictions to determine the scope of their individual framework and the nature in which they will implement it' (SCER 2013a, p. 2).

In recent years, Governments have also sought to take greater account of environmental, public health and agricultural risks when considering exploration and extraction licences. In 2015, the Australian Government released its Domestic Gas Strategy to provide a framework for responsible development of gas resources, ensuring that decisions are based on science and research (Department of Industry and Science 2015). It also contains principles for coexistence with agriculture and protection of farmers' rights (box 2.8).

Box 2.8 Domestic Gas Strategy: principles for coexistence with agriculture

1. Access to agricultural land should only be done with the farmer's agreement and farmers should be fairly compensated.
2. There must be no long-term damage to water resources used for agriculture and local communities.
3. Prime agricultural land and quality water resources must not be compromised for future generations.

Source: Department of Industry and Science (2015).

Concerns about laws that prioritised mineral and gas exploration over agriculture were raised by participants to this inquiry with many stressing the importance of ensuring that resource exploration and extraction is not undertaken at the expense of the agricultural industry (Agforce, sub. 17; Andrew Rea, sub. 9; Cotton Australia, sub. 23; EDOs of Australia, sub. 60).

How farm businesses are affected

In Australia, mineral rights are held by the Crown rather than privately (box 2.9). As a result, the Crown can grant exploration or extraction licenses to companies without a

landholder's consent, subject to compliance with regulatory requirements and prohibited areas (Chen and Randall 2013; Hepburn 2011). When it does so, it authorises the licensee to exercise certain rights held by the Crown, including the right to access those minerals. In her submission to the Senate inquiry into the Landholders' Right to Refuse (Gas and Coal) Bill 2015, Professor Hepburn explained:

> … [T]he rights of the resource title holder may be accompanied by an express or implied access entitlement to access the resource by crossing the land. The private landholder is bound to uphold this entitlement and cannot deny the rights of the State in this context. The state is the absolute owner of the land. The state has reclaimed ownership of the resource. The tenure framework gives the State the power to disaggregate those resources and reclaim them. Access to the resource is a necessary consequence of resource ownership. Access entitlements may be constructed as a[n] express requirement of the resource title or, pursuant to expressly conferred ancillary rights or, as a right which is implied and necessary. (Hepburn 2015)

Box 2.9 **Property and mineral rights in Australia**

Ownership of resources

In many common law jurisdictions, there is a presumption that all minerals on or beneath the surface of the land belong to the landholder, with the exception of Royal metals (gold and silver) (*Commonwealth v New South Wales* (1923) 33 CLR 1). In Australia, this rule has been modified by legislation in each of the states and territories, which vests the ownership of minerals in the Crown. By contrast, mineral rights in the United Kingdom and the United States are generally held in private ownership.

The ownership of resources by the Crown 'is grounded in the core assumption that the state is the appropriate owner of the resources because it has the capacity to ensure that those resources are properly utilized for the common benefit of all citizens' (Hepburn 2015, p. 2).

Allocation of exploration and production rights

A claim, lease or licence that grants the holder the right to explore for resources or undertake production is referred to as a 'tenement'. The three main forms of tenement are exploration licences, retention leases and production licences. A tenement is usually limited in time, and may be renewed or relinquished at its expiry (subject to certain rules and requirements).

In Australia, three main mechanisms are used to allocate exploration licences.

- First come first served: exploration rights are allocated to the first party to apply.
- Cash bidding: rights are granted to the party offering the highest cash bid.
- Work program bidding: interested parties specify the activity they intend to undertake and the relevant authority decides which to accept based on how well the work programs meet regulatory and other policy objectives.

Sources: Hepburn (2015); PC (2013b, 2015c); Senate Standing Committees on Environment and Communications (2015).

Nevertheless, licence holders must negotiate land access agreement with the landholder, sometimes involving payments of compensation. This is because:

> Landholder rights relate to the use of the surface of the land. However access to those mineral rights often means infringing on the rights of the landholder. Therefore negotiation between the owner of the mineral rights and the landholder rights takes place such that the infringement on the rights is appropriately compensated. (AMEC 2013, p. 8)

In practice, most conflicts between agriculture and resource companies are resolved through negotiated agreements about the conditions of access, with compensation payable to the landholder (PC 2013b). However, negotiations can be costly for both parties. Resource companies are reported to have purchased pastoral leases to maintain access options for their activities, which would otherwise require them to consult with landholders. Rio Tinto, for example, has leased and managed the Karratha cattle station in the Pilbara from 1966 and recently subleased it to the Ngarlama Aboriginal Corporation (Rio Tinto 2015).

Compensation

Resource exploration and extraction can be intrusive and cause degradation of the surface land. For example, in NSW, opal mining at Lightning Ridge resulted in collapses and serious structural instability of the surface land, leading to concerns by landholders about stock welfare, safety and damage to the environment (NSW DPI 2013b).

In most jurisdictions, landholders have a statutory right to compensation for resource companies accessing their land. Participants to this inquiry emphasised the importance of ensuring that compensation arrangements are fair and adequate (Andrew Rea, sub. 9; Cotton Australia, sub. 23).

The Commission has previously identified shortcomings in the compensation provisions across jurisdictions and identified 'scope for improvements to legislated compensation criteria to better reflect the costs to landholders from negotiating land access agreements and from the decline in the value of their properties' (PC 2015c, p. 77).

One shortcoming is a lack of explicit compensation for the cost of obtaining professional advice (PC 2013b, 2015c). In Victoria and Western Australia, for example, the landholder is not explicitly entitled to compensation for the cost of obtaining legal advice. In New South Wales, compensation is only available for legal advice, but not financial or other expert advice. The NSW Farmers' Federation expressed concern that compensation in that state for legal costs was capped and limited to the initial stages of the negotiation of an access agreement (PC 2013b).

Landholders have also argued that the time and stress of dealing with resource companies seeking access should be compensable (PC 2013b). In this vein, Andrew Rea said:

> [Y]ou have to deal with them in your own time. Most Resource Companies will not pay you for your time. Everyone has the right to be paid for their time. I do not have the right to refuse to provide my time free of charge. (sub. 9, p. 2)

Previously the Commission recommended that state and territory governments ensure that reasonable legal and other costs incurred during land access negotiations are compensable by resource companies. The Commission has also emphasised the importance of making sure that landholders are aware that such compensation is available (PC 2013b).

Asymmetry of bargaining power and the right of veto

In many cases, rural landholders are at some disadvantage when undertaking access or compensation negotiations (PC 2013b, 2015c). In part, this stems from an asymmetry of experience and knowledge, as landholders are likely to have limited experience with such negotiations and have less knowledge about how prospective resource projects will impact agricultural land.

A further source of imbalance is the involuntary nature of the negotiations. That is, while a licence holder has to negotiate a land access agreement with the landholder, the latter party does not have a right to refuse access (St John 2014). A number of participants in this and other processes have argued that this power imbalance could be mitigated by allowing farmers to refuse land access by resource companies (Senate Standing Committees on Environment and Communications 2015).

In the past year, a number of federal members of parliament have expressed support for giving farmers a right of veto over coal seam gas operations (Chan 2015; Sprague 2015). In 2015, a Senate Committee inquiry relating to the Landholders' Rights to Refuse (Gas and Coal) Bill 2015 (which would give effect to a right of veto) expressed in-principle support for such a right:

> The committee supports the principle that an agricultural landholder should have the right to determine who can enter and undertake gas or coal mining activities on their land. Landholders who provide access should be fairly compensated for doing so and shown respect when entry on their land takes place. (Senate Standing Committees on Environment and Communications 2015, p. 51)

However, the Committee ultimately recommended against passing the Bill on the basis that the drafting of some provisions created uncertainty or meant that they were impractical to implement. (For example, it would be virtually impossible for a resource company to know for certain that it had obtained written authorisation for access from every person who had an 'ownership interest' in land.)

The Committee also noted agreements between landholders and resource companies could improve landholders' rights. For example, in the Agreed Principles of Land Access

between NSW Farmers, Santos and AGL, the latter two parties undertook to not enforce arbitration for land access for coal seam gas activities in New South Wales, effectively giving landholders a right of veto (Sprague 2015).

A right of veto is inconsistent with facilitating efficient land use

The overriding objective of land use policy is to facilitate the efficient use of land. In principle, property rights that are clear, secure and freely tradable will be acquired by those who value them most, resulting in an efficient allocation of land rights. In many cases, this is true regardless of who initially holds the property right, because the right can be sold to any person who is willing to pay more for it. However, this outcome may not be reached if transaction costs are prohibitive (Coase 1960).

At present, the right to compel land access for the purpose of resource exploration and extraction is held by the Crown (on behalf of the community), who may grant licences to resource companies to exercise this right. This right is complementary to the Crown's ownership of subsurface minerals.

A right of veto would vest the power to make land access decisions in the landholder, arbitrarily transferring property rights from the community as a whole to individual landholders. Additionally, a right to refuse access to *land* is a de facto right to refuse access to *minerals*, encumbering the Crown's ability to exercise its ownership of subsurface minerals. (By contrast, a landholder's permission to access land would not by itself grant access to minerals, given that ownership of minerals vests in the Crown.)

On this basis, the Commission considers that land access rights for resource exploration and extraction should vest in the Crown, given that it also owns subsurface minerals. This is because the right to access those minerals cannot be exercised without a right to access land, meaning that, if those rights are held by separate parties, additional transaction costs will be incurred when allocating and exercising exploration and production rights.

A right of veto is also inconsistent with the tenet that land title does not grant absolute ownership and the Crown's general power to compulsorily acquire property. In particular, there is no reason why an exception should exist for agricultural land vis-à-vis resource exploration and extraction.

As discussed above, reforms that confer additional property rights on landholders should also ensure that the incidence of the reform's costs and the benefits are aligned. This helps ensure that the allocation of property rights is efficient and that land is put to its highest value use. Therefore, if reforms vest a right of veto with rural landholders, those landholders should be required to pay the government the full opportunity cost of the increased property rights that they have secured.

Insofar as a right of veto is aimed at preserving agricultural land per se, such a policy risks generating a net cost to the community if land is not put to its most efficient use

(PC 2015c). Moreover, any distributive justice considerations relating to land access negotiations should be addressed through compensation arrangements, rather than through a transfer of land rights from the community to individual landholders.

DRAFT FINDING 2.2

Regulation and policies aimed at preserving agricultural land per se can prevent land from being put to its highest value use.

A right of veto by agricultural landholders over resource development would arbitrarily transfer property rights from the community as a whole to individual landholders.

2.6 Planning, zoning and development assessment

Planning, zoning and development assessment processes underpin the management of land use across Australia and play an important role in balancing the social, environmental and economic impacts of development.

Concerns raised by participants to this inquiry about planning and zoning regulation included:

- the unnecessary complexity of regulation and processes
- the prescriptiveness and over-restrictiveness of regulation
- poorly designed or targeted regulations
- the time and cost associated with development assessment processes.

Aspects of planning and zoning regulation and development assessment and approval processes have been the subject of a number of Commission studies (PC 2011d, 2012b, 2013a, 2014d) and many of the concerns raised in this inquiry were in line with those raised in previous reviews.

Most state and territory governments have also recently conducted, or are conducting, major reviews of their planning and zoning regulations. However, progress in implementing recommended reforms has been patchy and slow.

In addition, previous studies identified an increase in stated objectives for planning, zoning and development regulation over time (PC 2011d). This has led to an 'objectives overload' and regulatory objectives that are unclear and conflicting (PC 2011d, 2012b, 2013a). For example, the Victoria Planning Provisions states two conflicting objectives for the Farming Zone:

- to ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture

- to encourage the retention of employment and population to support rural communities (Animal Industries Advisory Committee 2015).

As a result, it can be difficult to assess the efficiency and effectiveness of regulation, because regulatory objectives are often poorly articulated or inconsistent.

Complexity of land use regulation and duplication of processes

The complexity of land use planning arrangements and duplication of regulation between different levels of government was a key concern for participants. The NSW Farmers' Association said that 'poor regional planning is a result of excessive compliance [requirements] combined with a lack of strategic planning' (sub. 72, p .7). The National Farmers' Federation (2013b) also argued that there is 'planning overload' across multiple jurisdictional levels and across different policy areas.

Other participants pointed to inconsistencies between different regions and levels of government. The Australian Chicken Meat Federation, for example, suggested that outcomes of development applications seemed to be based on particular biases of local governments:

> There are significant inconsistencies between local councils in the interpretation of planning requirements for similar operations, and the time, difficulty and success in obtaining approval varies between states and local councils. Under the current arrangements the outcomes of development applications often appear to depend on the particular bias of local authorities towards (or against) chicken meat production rather than the merits of the particular application. This has the effect of distorting which chicken companies are able to expand and which not, and contributes to the movement of location of chicken production from where it is most efficient to operate to where it is easiest to do business. (sub. 40, p. 2)

The Victorian Farmers Federation (2014a) said that such inconsistencies can make it difficult for farmers to understand their obligations under both planning and environmental law. To address these issues, reforms underway in Tasmania will see the introduction of a single planning scheme for the whole state (TDoJ 2015).

A number of participants called for better coordination across the different levels of government. The Australian Chicken Growers Council said there was 'a strong case for a common set of guidelines for use in all state and local government areas' (sub 51, p. 4). The Australian Forest Products Association also advocated for:

> [t]he Federal Government to work with other jurisdictions (State and local government) to both review landscape management approaches across tenures and apply an improved holistic landscape management approach, where multiple values are actively managed, incorporating collaborative action across land tenures and managers. (sub. 11, p. 8)

While some state-level standardisation of land use regulation is desirable, this must be weighed against the advantages of administering planning and zoning regulations at the local level. In particular, local administration and enforcement may give greater flexibility

for regulations to be appropriately adapted to suit local social, economic and environmental needs, especially where the consequences of decision making are borne by the local community. On the other hand, there may be challenges associated with decision making at a local level, such as financial constraints and ensuring impartiality. This is in line with what is known as the 'subsidiarity principle': that decisions should be made by the lowest level of government capable of considering all costs and benefits, provided that it has sufficient resources and capacity to do so (PC 2012b).

Length and costliness of development assessment processes

Development application processes, which are often the responsibility of local governments, can be complex and time consuming (PC 2013a). Farmers can also be required to complete multiple applications in order to obtain approval for a single development (Retailer and Supplier Roundtable Ltd 2014).

Many participants to this inquiry expressed frustration with the extensive delays, costliness and complexity of processes associated with obtaining development approvals (Australian Chicken Growers' Council, sub. 51; Australian Chicken Meat Federation; sub. 40; API, sub. 66; Burdekin Shire Council, sub. 35; Cordina Farms, sub. 64; NFF, sub. 61; Tasmanian Farmers and Graziers Association, sub. 16). For example, the Australian Chicken Meat Federation said:

> The costs of progressing a [development application (DA)] for a poultry farm are substantial. In states where odour modelling in support of a DA is required, the up-front consultancy costs associated with the preparation of a DA can start at $50,000 - $60,000 by the time the Environmental Impact Statement has been prepared (including the cost of odour dispersion modelling). Depending on feedback, consultancy fees of the order of $100,000 can easily be incurred simply in preparing the DA … If a DA goes to court, the cost could be upwards of $250,000 for the appellant alone. (sub. 40, pp. 2–3)

Several participants expressed particular concern with the length and costliness of native title processes (CPC, sub. 71; Northern Territory Department of Primary Industry and Fisheries, sub. 67; NFF, sub. 61; Voice of Horticulture, sub. 42). The NFF said that 'in some instances, consideration of native title claims has taken decades, and remains unresolved' (sub. 61, p. 8). The Northern Territory Department of Primary Industry and Fisheries also said that native title processes were unnecessarily complex:

> The processes involved are not clear, especially to foreign investors, who have no experience with similar processes in their home countries. More work could be done to simplify native title extinguishment processes, whilst acknowledging the importance of comprehensive consultation with native title holders. Simpler native title processes with clear guidelines for negotiations could provide a mechanism to increase involvement of native title holders in the development of agriculture. (sub. 67, p. 2)

High barriers to development approval can act as a disincentive for development or investment. However, the Australian Chicken Meat Federation argued that they can also create incentives for over-investment or overdevelopment in certain areas:

> … once a site is identified which has a prospect of success, the emphasis of the developer is often on making the most of the opportunity by maximising the size of the farm put on it, and defraying the cost of the DA process over a greater production capacity. (sub. 40, p. 3)

Incentives to overdevelop can exacerbate negative spillovers from farming, such as emissions and environmental impacts. This can heighten conflicts between agricultural producers and neighbouring residential areas (section 2.5).

Prescriptiveness of regulation

Concerns were raised by groups representing farmers about the prescriptiveness of development requirements and building codes. The National Farmers' Federation (sub. 61, p. 8), for example, argued that these regulations were inadequate or ill-adapted to agricultural developments, although in some cases there were 'exemptions for a range of agricultural … structures'. One farmer that the Commission interviewed said that zoning practices and requirements were out of touch with how land was used in practice (box 2.10).

Box 2.10 Case study: a farmer's experience with zoning regulations

The Commission interviewed the co-owner of a large vegetable processing business that has evolved from a much smaller single farm operation over the past 25 years. The business's large, high-tech processing facility stands on land that is zoned as agricultural land. The owners of the business are seeking to have the land rezoned as commercial land, so that they can borrow against it.

The business has been in protracted negotiations with local government over rezoning the site for some time. The council has requested a range of changes to the facility and surrounds to meet the standards set for commercial properties in urban settings. The farmer said that many of these changes are impractical or prohibitively expensive to implement.

Source: Productivity Commission case study interviews (appendix C).

In addition, Cotton Australia said that local governments' one-size-fits-all approach to agricultural and urban developments is inappropriate:

> Increasingly Local Government appear to be try[ing] to apply the same level of scrutiny to buildings and developments on farms as they do to building and developments in urban areas. Cotton Australia is aware of one instance when a planning approval for a farm shed was held up for weeks, because the application did not deal with how the spoil from the footing excavations would be disposed. This needs to be seen in context that the total spoil amounted to two truck-loads, and the work was being conducted on a 40,000 ha farm, offering plenty of opportunity for sensitive disposal of generated material. (sub. 23, p. 6)

Similarly, the Australian Chicken Meat Federation said:

> The current [building] classification means that new poultry sheds are required to comply with a range of costly infrastructure additions that have no or negligible impact on the safety of the operation. The most contentious issue in the 2016 Code is the requirement for water storage and/or hydrants for fire brigades. The types of fire that may occur on poultry farms tend to fall into two categories — one that can by extinguished by the farmer immediately and very rapidly (normal farm infrastructure would include a water supply to each shed which could be used by the farm staff to contain any spread of a fire) or one in which the affected shed is totally engaged and on the point of or have collapsed within 10 minutes of ignition. In the latter case, fire brigade response time would need to be less than 10 minutes for intervention to have any impact, and there is therefore little value in having storage tanks and hydrants for use by fire crews, and the requirement for these becomes an unnecessary cost and complication … The cost of complying with these requirements is substantial. (sub. 40, p. 2)

Overly restrictive and prescriptive land use regulation can act as a deterrent to investment and operational expansion, particularly for small producers (Fitzgerald 2015). There has been little recent reform to address the prescriptive land use regulation affecting farm businesses, the exception being reforms in Victoria (box 2.11).

Box 2.11 **Reforms to rural zones in Victoria**

In 2013, the Victorian Government announced a series of reforms to rural zones in response to suggested improvements raised over several years by many industry bodies, local governments and members of the community. The reforms include:

- making most agricultural uses 'as of right' in most rural zones instead of requiring a planning permit
- removing permit requirements for farming related development such as netting and crop support structures
- allowing for the sale of farm produce without the need for a planning permit and removing restrictions on the sale of processed produce
- removing the prohibitions on complementary business uses in some zones, such as landscape gardening supplies
- reducing or removing permit limitations in the Farming Zone and Rural Conservation Zone relating to tourism uses, enabling applications to be considered on their merits, in order to encourage tourism.

Source: VDTPLI (2013).

Poorly targeted regulation

Participants also argued that regulation often fails to achieve the intended policy objectives. In some cases, this was because regulatory measures were not appropriately adapted to achieving their purpose. Tropical Pines, for example, argued that some

regulations designed to protect the agricultural industry in Queensland had the opposite effect:

> When we investigated the planning laws it became clear that we won't be able to gain planning approval due to the Rural Industries Code. That code, which is state government legislation, will not permit the construction of a packing facility on Class A or Class B agricultural land. The stated purpose is to protect agricultural land. Our argument is that if we are unable to build a packing facility to support the packaging and sale of fruit for 12 farmers in the area, then that could be very detrimental to the long term sustainability of the industry in that region. In other words there is no point in protecting agricultural land if farmers are prevented from packing and selling their fruit in a coordinated manner that provides them with a good farm-gate return and a sustainable farming business. (sub. 39, p. 5)

In other instances, regulation was thought to be ineffective or inadequate for addressing the perceived problem, particularly in relation to the definition of intensive farming, which can trigger the requirement to obtain additional planning or environmental approvals. Intensive farming is characterised by high levels of capital and labour relative to land, and can result in heightened public concern about environmental impacts (chapter 3) and animal welfare (chapter 5). It can be difficult to draw the line between intensive and traditional agriculture, especially as the intensity of a particular activity can vary over time due to drought. The definition of intensive farming varies between jurisdictions (box 2.12).

Box 2.12 Differences in the definition of intensive farming

Victoria

In Victoria, intensive animal husbandry is defined as 'land used to keep or breed farm animals, including birds, by importing most food from outside the enclosures'. In *Yarra Ranges SC v Happy Free Range Pty Ltd*, the Victorian Civil and Administrative Tribunal clarified that the relevant 'food' was the overall food needs of all the livestock on the land, bearing in mind the 'real and substantial purpose for which the land is used'. Moreover, the proportion of imported food should be determined according to the nutritional needs of the livestock, rather than the volume or weight of the food consumed. (In that case, the imported food was the primary source of nutrition for the animals and was not used for emergency or supplementary feeding.)

Queensland

The Queensland Planning Provisions defines intensive animal husbandry as 'premises used for the intensive production of animals or animal products in an enclosure that requires the provision of food and water either mechanically or by hand'. These provisions form the standard planning scheme provisions for all local governments in Queensland. In contrast to Victoria, this definition ties intensive farming to *how* food and water is provided, rather than its source.

Sources: *Yarra Ranges SC v Happy Free Range Pty Ltd* [2015] VCAT 1053; QDILGP (2016).

Participants identified the current arrangements in Victoria as being especially problematic. For example, the Australian Food Sovereignty Alliance said:

> The current definition [of intensive animal husbandry] in Victoria is based on importing 50% of animals' nutritional needs. This is clearly inadequate, and does not helpfully distinguish

between different systems and their impacts, be they environmental, social or welfare impacts. In Queensland, the definition for pigs is 21 standard pig units (SPU) – again divorced from actual land capacity assessments. (sub. 27, pp. 4–5)

Similarly, Australian Dairy Farmers said:

> Australia's dairy industry is largely, but not exclusively, based on animals grazing pasture for all or part of the year. Different state definitions for "intensive" or "extensive" farming create different triggers for permit requirements and regulatory compliance burdens. Some of these definitions (for example in Victoria) are particularly restrictive for what current agricultural businesses would classify as normal dairy production practices. (sub. 63, p. 3)

In support of this, in a report to the Yarra Ranges Council, Ag-Challenge Consulting said:

> The definition of intensive animal husbandry may be too broad to reflect the different environmental and amenity impact that would occur with different levels of intensity that are implemented in these enterprises. The definition should be reviewed to reflect the differing systems … (Ag-Challenge Consulting 2014, p. 42)

The Animal Industries Advisory Committee recently undertook an inquiry into, amongst other things, the adequacy of the definition of 'intensive animal husbandry' in Victoria. Policy options considered include tying the definition of 'intensive animal husbandry' to impacts of farming; creating specific land use terms for clearly intensive uses (such as hatcheries, feedlots and piggeries) to minimise reliance on a generic definition of intensive animal husbandry; and developing and maintaining contemporary Codes of Practice for all intensively farmed livestock (Animal Industries Advisory Committee 2015). This report was delivered to the Minister for Planning on 29 April 2016, but has not been made publicly available.

Options for reform

The Commission has previously identified a number of leading practices for reforming land use planning regulation (box 2.13). Adopting these leading practices would address many of the unnecessary regulatory burdens in this area faced by farm businesses — especially with respect to streamlining regulation and processes.

However, some regulatory burdens are unique to, or have a greater impact on, the agricultural sector. This includes regulations that fail to meet their regulatory objectives because they are not appropriately adaptable or targeted for managing agricultural land uses, such as building codes and the classification of intensive agriculture (as discussed above). These problems could be addressed by ensuring that regulation is fit for purpose and implementing outcomes-based regulation rather than prescriptive regulation.

Fit-for-purpose regulation

Land use regulations and policies affecting farm businesses can be improved by ensuring that they are fit for purpose. Fit-for-purpose regulation tends to be:

- *targeted* — the scope of the regulation (that is, who or what the regulation applies to) should be clear and appropriate for addressing the regulatory problem
- *evidence-based* — there should be an apparent and demonstrable connection between the content of the regulation and the regulatory objective
- *proportionate* — the burden imposed by the regulation on government agencies and the public should not be disproportionate to the regulatory outcome achieved.

Box 2.13 Leading practices for planning, zoning and development assessment processes

A number of Commission reports have identified leading practices for improving planning, zoning and assessment arrangements. These include:

- clear, consistent and coherent regulatory objectives
- broad and simple land use controls to: reduce red tape, enhance competition, help free up urban land for a range of uses and give a greater role to the market in determining what these uses should be
- risk-based and electronic development assessment
- statutory timeframes for referrals, structure planning and rezoning
- undertaking periodic reviews to ensure that regulatory agencies have the necessary governance frameworks, resources, capacity and skills to efficiently administer their functions.

Source: PC (2011d, 2012b, 2013a).

Ensuring that regulation is fit for purpose can help confine the incidence of regulation, in order to reduce unnecessary regulatory burdens and limit unintended consequences. Governments should also undertake periodic reviews of regulation to ensure that they are, and remain, fit for purpose over time. As discussed above, participants to this study identified regulations relating to rural zones and intensive farming as areas of particular concern.

Outcomes-based regulation

In many cases, the overly restrictive nature of land use regulation affecting farm businesses could be mitigated by preferring outcomes-based regulation (PC 2013a). This includes regulations that require farmers to achieve certain performance standards or outcomes, without prescribing how to do so or proscribing certain land uses or activities. For example, reforms to zoning regulations in Victoria now allow a broader range of

complementary land uses to take place in rural zones, subject to certain standards being met (box 2.11).

Outcomes-based regulation can also give landholders flexibility and control over how they use and manage their land, while still ensuring that regulatory objectives are met. This can allow regulatory problems to be addressed efficiently and at least cost.

However, outcomes-based regulation may not be appropriate if outcomes are too difficult or costly to quantify or monitor. Similarly, if they do not give landholders additional choice or flexibility (for example, if there is only one way of achieving a regulatory outcome), it may not be appropriate to regulate based on outcome.

3 Environmental regulations

Key points

- As around half of Australia's total land area is used for agriculture, the success of efforts to preserve Australia's biodiversity depend in large part on the actions of the agricultural sector.
- Regulations aimed at the conservation of native vegetation, biodiversity and threatened species are complex. There are also many overlapping federal, state and (sometimes) local requirements, as well as international conventions to which Australia is a signatory.
- Native vegetation and biodiversity conservation regulations can affect the ability of landholders to manage their land, sometimes with serious adverse effects. The regulations:
  - limit farmers' capacity to respond to changes and to benefit from innovative technologies
  - impose considerable costs on some farm businesses (with farmers bearing the financial burden of conservation for the benefit of the entire community)
  - involve complex and costly processes (including the need to obtain and pay for detailed specialist advice about the presence of protected species or ecosystems on the property)
  - are in some cases administered in a very bureaucratic and inflexible fashion
  - do not always result in improved environmental outcomes (and there is evidence of some perverse incentives and outcomes from environmental regulation).
- To address these concerns, Australian governments need to continue efforts to reduce regulatory overlap and duplication. There is also scope for governments to:
  - fundamentally change native vegetation and biodiversity conservation regulations, so that they consistently consider economic, social and environmental factors; account for the impact of proposed activities on the landscape or the region (not just the impact on individual properties); and are based on an assessment of environmental risks
  - continue to develop market-based approaches to native vegetation and biodiversity conservation — this could include buying environmental services (such as native vegetation retention and management) from existing landholders to achieve the particular environmental outcomes the community is seeking
  - review the administration of environmental regulations, including the way in which regulators engage with landholders. Governments need to enhance the advice and support they provide to landholders about environmental regulations, particularly by explaining how their requirements interact with those imposed by other governments.
- The burden imposed on farm businesses by native vegetation and biodiversity regulations could be reduced while maintaining, or even improving, environmental outcomes.
- While regulations relating to noise, odour, air emissions, waste discharge and other forms of pollution address spillovers, they can adversely impact the efficiency and productivity of agricultural industries. These impacts can be the result of applying regulations designed for unrelated industries, such as manufacturing, to the agricultural setting without a full assessment of the efficacy of doing so.

As around half of Australia's total land area is used for agriculture (ABS 2016a), successful environmental management and the conservation of biodiversity depend in large part on the actions of the agricultural sector. Farmers play a vital role as environmental stewards and land managers, and contribute to many conservation efforts. Australia's current levels of biodiversity and other environmental assets are the result of this stewardship over multiple generations.

This chapter considers the ways in which environmental regulations affect farm businesses. Section 3.1 describes the role of governments in environmental protection, while section 3.2 provides an overview of current environmental regulations. In section 3.3, the impacts of environmental regulations are examined, with a particular focus on the effect of native vegetation and biodiversity conservation regulations. Section 3.4 suggests potential strategies for addressing identified issues and reducing the burden imposed by environmental regulations.

3.1 Why are governments involved in environmental protection?

Farmers have a clear operational and financial incentive to preserve and care for the land, its native vegetation and biodiversity where this maintains or improves the productivity of the land or delivers private benefits in terms of environmental amenity. Retaining native vegetation is one of the main strategies through which farmers promote conservation. Sustainable management practices can also contribute to property values, as a well-managed and maintained farm will command a higher price than one that has been overexploited. Because of these private benefits, environmental protection on agricultural land does not exhibit the tragedy of the commons to the same extent as, say fisheries, where common ownership of waters can lead to overfishing in the absence of sound fishing regulations.

But while farmers bear many of the costs of conservation (including less available grazing and cropping land), conservation also provides public benefits such as the protection of threatened species, reductions in salinity and protection against land degradation. The incentive for farmers, therefore, may be to underinvest in conservation from a communitywide perspective. As the Environmental Farmers Network put it:

> Native vegetation provides many services to the landholder and the broader community. As well as providing shelter for stock, it helps to mitigate dryland salinity and control wind and water erosion and water logging, it captures carbon and improves water quality as well as providing habitat for native birds and animals. (EFN 2015)

WWF Australia pointed out that 'native vegetation also protects the Great Barrier Reef by reducing soil loss and consequent water pollution in the rivers which flow into the Reef' (sub. 85, att. 3, p. 3). There is a potential role for government to be involved in nation vegetation conservation and environmental protection, provided there is a net communitywide benefit.

While governments provide a range of native vegetation and biodiversity conservation services (including in national parks, state parks and other public reserves) this can be costly and may not deliver the level of conservation for which the community is willing to pay. This can occur for several reasons.

- Certain types of native vegetation are not well represented in public reserves, and limits to the supply of land for public reserves have often been irreversibly established.
- Conservation outcomes in public reserves depend, at least in part, on sound management practices on adjoining private land. (The reverse is also true, and landholders' concerns about the management of public land are discussed below.)
- Native vegetation conservation can be provided at lower cost on private land than in public reserves, provided the private land can continue to be used for commercial purposes as well as for public-good conservation (Clarke 2002).

Government intervention to promote native vegetation and biodiversity conservation on private land, and natural resource management (NRM) more broadly, is justified where the benefits to the community exceed the costs to private landholders and the costs to the community in general. To achieve these benefits, governments have typically relied on regulation. The current stock of environmental regulations is also, in part, the result of significant changes in Australian society's views about how natural resources should be managed for current and future generations (box 3.1).

Governments have also developed environmental regulatory frameworks to limit businesses' effects on air and water quality and their emissions of odour, noise and waste. Where the costs of these emissions are not fully and directly borne by the businesses that cause the costs, they are known as negative environmental externalities, or 'spillovers'. Human health risks and ecosystem damage arising from pollution are examples of the negative environmental externalities that environmental regulations seek to limit. Environmental externalities can also be a key factor in conflicts over land use, particularly in the context of the interface between residential developments in agricultural areas and established agricultural and pastoral activities (chapter 2).

The challenge for governments when developing environmental regulatory frameworks and policies is to achieve a balance between the benefits of agricultural production and the potential environmental costs, as well as to ensure that the frameworks and policies have clear and measurable objectives. The task for the regulators is to efficiently administer those frameworks and policies in line with their objectives, in the face of rapid change in the agricultural sector and in regional communities.

Box 3.1 Changes in environmental policies

Government policies have not always been geared towards environmental protection. From the 1850s onwards, huge areas of forest and scrub were cleared for pasture. Indeed for many years government-imposed requirements to clear areas of native vegetation, or to demonstrate use of the land by maintaining certain stock levels, were conditions in allocating freehold and leasehold land for farming.

> The wish to provide land for soldier settlers after both World Wars led to the subdivision of large properties into smaller blocks, many of which proved to be too small to provide viable incomes once commodity prices declined, and were consequently overstocked (McKeon et al. 2004, p. 22)

These policies had strong social support, but were not particularly successful in economic or environmental terms. Land clearing was significant and widespread, and intensive grazing was required to ensure even a subsistence level of return for labour. An over-expectation of the carrying capacity of the land, and a physical and/or economic inability to quickly destock the land during periods of drought, also contributed to environmental degradation.

In the period 1970–1990, tax incentives and cheap government loans made land clearing financially attractive to farmers. There was also a view that society would benefit if more young people were settled on the land and took up farming, exemplified by the establishment of organisations such as the Young Farmers' Finance Council in Victoria in 1979.

The combined effect of these policies over many years was the widespread adoption of what are now seen as inappropriate land management practices. Examples included overgrazing, cropping of marginal land, poor irrigation practices and the introduction of exotic species.

More recently, governments enacted legislation that restricts the ways in which farm managers use their land, with an emphasis on sustainability. The introduction of these regulations was, and in some states remains, contested, for example with the representation of the Shooters, Fishers and Farmers Party in the NSW Parliament.

Sources: DEWHA (2010); Dore, Binning and Hayes (1999); Finlay (2014); McKeon et al. (2004); PC (2004a).

3.2 Environmental regulations: the current state of play

Governments in Australia have in place a wide range of environmental regulations. Estimates of the number of environmental laws vary, but according to the Australian Law Reform Commission, at a minimum 'there are approximately 60 Commonwealth environment-related statutes in force' (ALRC 2015, p. 224).

The states and territories also have regulations to control clearing of native vegetation on private land, protect threatened species or biodiversity, and protect the environment more broadly. For example, in South Australia there are 17 laws pertaining to native vegetation and related matters (COAG SCEW 2012, p. 90), and dozens of laws relating to other aspects of environmental protection. Local governments also have a variety of plans and schemes that, while focused on land use planning (chapter 2), often cover aspects of environmental protection or management.

While some of the environmental regulations introduced by each level of government were adopted after a thorough assessment of regulatory options and impacts, others were introduced in a more abrupt fashion as a reaction to environmental incidents that attracted public concern. The development of these regulations may have lacked sufficient consideration of the nature of the problem to be addressed and the costs and benefits of the regulation relative to other approaches, including less prescriptive regulation (PC 2004a).

State and territory laws protecting native vegetation and biodiversity

State and territory regulations to control clearing of native vegetation on private land and to protect threatened species or biodiversity more broadly are relatively new — South Australia and Victoria were the first to regulate the clearing of native vegetation, in 1985 and 1988 respectively, with other jurisdictions following during the 1990s. Tasmania was the last jurisdiction to introduce legislation in 2002 (Bricknell 2010).

There are notable differences between jurisdictions in the approach and coverage of native vegetation regulations. This variation is important, as it allows the sometimes considerable differences between regions to be taken into account. But despite their differences, laws governing the clearing of native vegetation in each jurisdiction generally contain five main features (box 3.3). In some cases there are also differences within jurisdictions in the way in which native vegetation regulations are implemented and enforced. These are discussed in section 3.3.

Box 3.2 About offsets

Offsets are designed to increase the flexibility of conservation policies by allowing unavoidable environmental impacts from various activities to be counterbalanced by measures implemented elsewhere that improve or maintain overall environmental conditions.

The Australian Government and all states and territories except the Northern Territory have offset policies (though the offset policy currently in place in New South Wales, for example, only applies to major projects, and so rarely applies to agricultural projects). While offset policies vary, they generally:

- have the objective of ensuring either 'no net loss to the environment' or of environmental gain. An example of the latter is the Significant Environmental Benefit as legislated in South Australia's *Native Vegetation Act 1991* (and associated Regulations). The Significant Environmental Benefit is 'intended to compensate for the loss of vegetation from approved clearance activities … by managing and enhancing native vegetation elsewhere with the intent of providing a net environmental gain over and above the impact of the clearance' (SA Government, sub. 57, p. 15).
- must be used as a last resort, applied only after appropriate efforts have been made to avoid adverse impacts and to minimise and mitigate unavoidable impacts.

Offsets can either be direct (measures that directly improve, create, or avert the loss of habitat, on either public or private land) or indirect (measures that indirectly benefit the environment such as research funding for revegetation techniques).

Box 3.3 Common features of native vegetation regulations

Laws governing the clearing of native vegetation in each jurisdiction generally contain five main features.

4. **A definition of native vegetation.** Native vegetation is usually defined to include not only vegetation in its original state but also single trees, regrowth and/or patches of remnant vegetation. However, not all jurisdictions include all types of native vegetation in their legislative definitions of 'native vegetation' (for instance, Victoria's native vegetation regulations applying to plants that are indigenous to Victoria whereas Queensland's apply to all plants native to Australia but exclude grasses and mangroves).
5. **A requirement to obtain approval to remove native vegetation**. Approval processes vary within and between jurisdictions depending on one or more of the following factors:
   - the type of vegetation to be cleared
   - the size of the area to be cleared
   - the purpose of the clearing (with different rules applying to clearing for agriculture versus clearing for mining, for example)
   - the proposed clearing action (for instance, lopping a branch may be regulated in a different manner to complete destruction of a stand of trees. In some states, grazing of livestock is considered to be 'clearing' as it may damage vegetation in the grazed area)
   - land tenure arrangements (such as pastoral lease or freehold land)
   - whether the native vegetation was planted for harvest.
6. **Exemptions to the approval processes.** Certain types of clearing activities (such as keeping roads and fire trails clear, taking wood for personal use, removing vegetation close to buildings for bushfire prevention or removing regrowth that is less than a certain age) and clearing on certain tracts of land (such as land designated for community infrastructure) do not always require approval.
7. **Systems for assessing vegetation offsets.** Offsets are undertakings to protect and manage native vegetation (box 3.2). The assessment of vegetation offsets generally involves assessment of gain, where gain is the predicted improvement in the contribution to biodiversity made by native vegetation at a site.
8. **Monitoring programs** to keep track of changes in the quantity or quality of native vegetation, often using satellite imagery. For example, in the Northern Territory, 'regular monitoring, including aerial photography and satellite image analysis and on ground inspections ensures compliance with the [native vegetation] controls' (NT DLRM 2016). The Western Australian Government is developing a monitoring tool that 'will use newly available satellite data augmented by photographic evidence provided by land managers as a basis for rangeland condition monitoring across the rangelands estate. The vegetation cover and trend information collected will provide a solid foundation to support evidence-based decision making on land use planning and land management' (sub. 54, p. 16).

The stated objectives for introducing restrictions on the clearing of native vegetation vary between jurisdictions. However, most aim for no net loss in the contribution made by native vegetation to biodiversity and healthy environments. Victoria's native vegetation clearing regulations, for example, have the objective of ensuring that 'permitted clearing of native vegetation results in "no net loss" in the contribution made by native vegetation to Victoria's biodiversity'. In some jurisdictions mention is also made of 'ecologically sustainable development' — though as the Commission has previously noted, there are diverging views on what 'ecologically sustainable development' entails and how it should be operationalised, and allowing these diverging views to persist may be a choice on the part of governments (PC 2013a).

In other jurisdictions, the objectives in the native vegetation and biodiversity conservation legislation have the potential to be in conflict. For instance, the New South Wales *Native Vegetation Act 2003* aims 'to provide for, encourage and promote the management of native vegetation on a regional basis in the social, economic and environmental interests of the State' but also to protect native vegetation of high conservation value, to improve the condition of existing native vegetation and to encourage the revegetation of land.

There have been a number of reviews of native vegetation and biodiversity conservation laws at the national level (for example, HoRSCE 2014; PC 2004a; Senate Finance and Public Administration References Committee 2010).

The Australian, state and territory governments are also working together on joint reviews:

- A review of Australia's Biodiversity Strategy 2010–2030 commenced in 2015, and is being prepared for consideration by Environment Ministers in 2016 (MEM 2015).
- The National Review of Environmental Regulation published an interim report in March 2015 (DoE 2015b). It identified areas for assessment of potential reform opportunities, including threatened species listing processes and biodiversity regulation (including offsets). The final report of this review is also being prepared for consideration by Environment Ministers in 2016.

Many state and territory native vegetation laws are also under review, or have recently been amended (box 3.4).

Box 3.4 States' reviews of native vegetation laws and policies

- In **New South Wales**, the Independent Biodiversity Legislation Review Panel presented its final report in December 2014. It found that the current laws in New South Wales 'create a complex system that is difficult for the community to navigate, has imposed unnecessary regulatory burdens, especially in certain regions and sectors across the state, is process driven and not fulfilling current objectives in the most effective and efficient way' (Byron et al. 2014, p. 4). Byron et al. recommended numerous changes to the NSW native vegetation management system, including replacing current laws with a new risk-based Biodiversity Conservation Act. In response, the NSW Government has proposed reforms to the legislative framework for native vegetation management, private land conservation, threatened species and other protected native animals and plants in New South Wales (NSW Government 2016).
- **Victoria** amended its native vegetation permitted clearing regulations in 2013 to reduce the burden on landholders and provide them with more information about the biodiversity value of native vegetation on their land. Following the change of government in November 2014, the native vegetation clearing regulations are once again under review. A consultation paper was released for public comment in March 2016 (VDELWP 2016b). In addition:
  - the *Flora and Fauna Guarantee Act 1988* (Vic), which aims to ensure that all flora and flora 'can survive, flourish and retain their potential for evolutionary development in the wild', is being reviewed
  - a new Biodiversity Strategy has been released in draft form. Its proposed goals are to encourage more Victorians to value nature and to ensure that Victoria's natural environment is healthy (VDELWP 2016a).
- Changes introduced in **Queensland** in 2013 were designed to reduce red tape and regulatory burden on landholders. They included allowing cattle grazing in national parks, removing the prohibition on large-scale clearing for agricultural, horticultural or pastoral purposes, and changing the onus of proof for vegetation clearing offences (towards a presumption in favour of the innocence of the landholder) (Cripps 2013). A bill to reintroduce many of the abolished regulations, including the prohibition on clearing for high-value agriculture and irrigated high-value agriculture, is currently before the Queensland Parliament. The proposed legislation (the Vegetation Management (Reinstatement) and Other Legislation Amendment Bill 2016) has been referred for consideration by the Agriculture and Environment Committee, which is due to report by 30 June 2016.
- The **South Australian** Government is conducting a review of its native vegetation regulations, 'with the aim of reducing the regulatory burden for landholders and to establishing a stronger focus on the value of native vegetation in achieving biodiversity conservation priorities' (sub. 57, p. 15).
- In 2013, the **Western Australian** Environmental Protection (Clearing of Native Vegetation) Regulations were amended to increase the area in which certain prescribed clearing activities are permitted without a clearing permit from one to five hectares each year, and to extend the exemption time frame for maintaining previously cleared areas from ten years to twenty years (DoE 2015b).
- In **Tasmania**, a review of the Permanent Native Forest Estate Policy has been underway since mid-2015. Among the issues being considered by the review is broad scale clearing. Broad scale clearing was due to be phased out in Tasmania by 1 January 2016, but the cessation has been deferred until 1 July 2016 (TDSG 2015).

The Environment Protection and Biodiversity Conservation Act

The *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) is a Commonwealth law that provides a legal framework for protecting nationally and internationally important flora, fauna, ecological communities and heritage places — collectively termed 'matters of national environmental significance'. These matters are:

- world heritage values (underpinned by the Convention Concerning the Protection of the World Cultural and Natural Heritage)
- national heritage values
- listed threatened species
- listed migratory species
- listed ecological communities (for example, lowland subtropical rainforest or grasslands of the Victorian volcanic plain)
- wetlands of international importance (sometimes called 'Ramsar' wetlands after the international treaty under which such wetlands are listed)
- nuclear actions (including uranium mines)
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- water resources impacted by a coal seam gas development or a large coal mining development. (Commonly called the 'water trigger', this matter was introduced into the EPBC Act in June 2013.)

Landholders who plan to undertake actions that would have a significant impact on a matter of national environmental significance are required to follow the EPBC Act's 'referral, assessment and approval' process. For farm businesses, this situation typically arises when the business plans to clear native vegetation or undertake development that could affect plants, animals or ecological communities that have been listed as threatened under the EPBC Act.

The EPBC Act process comprises the following stages:

- *Referral*. The EPBC Act places the onus for referring a proposed action on the person proposing to take the action. When a proposed action is referred to the Environment Minister, the Minister (or delegate) has 20 business days to decide whether it is likely to require approval under the EPBC Act. If a significant impact on a matter of national environmental significance is considered by the Minister (or delegate) to be unlikely, further assessment is not required and the proponent can proceed to take the referred action with certainty in respect to Commonwealth laws.
- *Assessment*. If the Minister considers that the proposed action has a high likelihood of having a significant impact on a matter of national environmental significance, then the action is deemed to be a 'controlled action'. It requires Ministerial approval, and the application proceeds to the assessment stage.

- *Approval*. The Minister decides to either grant approval, to grant approval with conditions, or to deny approval for the action.

The outcomes of the referral, assessment and approval process under the EPBC Act do not affect any state or local government approvals that may be required, so actions that are permitted under the EPBC Act may be prohibited by state or local governments, and vice versa.

The number of agriculture referrals is low. The Department of the Environment said that:

> There are fewer referrals from the farming sector than in any other sector. Agriculture and forestry made up just 2% of all referrals received under the EPBC Act from 1 January 2000 to 4 March 2013. (sub. 80, p. 6)

And agricultural projects are rarely required to proceed to assessment. In the period 1999–2014, there were 54 agriculture-related projects referred for assessment, of which eight projects were subject to conditions (Australian Government 2014a).

Certain activities undertaken before the commencement of the EPBC Act in July 2000 and that have been undertaken on a continuing basis since that time are permitted under a 'continuing use' exemption. Examples include routine grazing activities, continuing cropping and crop rotation and maintenance of existing dams, roads and fences (Department of the Environment 2013).

Other environmental regulations

A range of other environmental regulations can affect farm businesses. These include regulations relating to pollution control, feral animals, weeds and other pests, as well as those concerning native animals.

Pollution control regulations

The emission of pollutants into the air, water and soil was the first environmentally damaging practice to receive regulatory control in Australia. Legislation regulating the emission of pollutants was first introduced in Victoria in the 1970s, with other states and territories following (Bricknell 2010). Pollution control regulations seek to deliver the:

- prevention, control and abatement of pollution and environmental harm
- conservation, preservation, protection, enhancement and management of the environment.

Pollution control legislation typically cover air quality, odour, noise, water quality (including effluent discharge) and waste and resource recovery.

The enforcement of pollution control legislation falls under the auspices of state governments' environment departments or independent statutory authorities known as environmental protection agencies or environmental protection authorities (EPAs).

Pollution control legislation affects different farm business in different ways. For example:

- requirements to contain and reuse effluent, and to prevent it from leaving a property or entering waterways have a particular impact on intensive livestock industries such as feedlots, dairy farms and piggeries, as well as processing facilities such as abattoirs (chapter 4)
- noise limits and curfews affect the operation of chicken farms, by limiting the time periods during which chickens can be harvested
- air quality regulations limit the dust that may be emitted by cotton gins and grain silos
- odour and waste regulations affect abattoirs, where there are many potential sources of odour (NSW EPA 2013a). They also affect the feedlot industry, as 'odour and waste are inevitable by-products of feedlot and intensive finishing systems' (MLA 2015).

Many of these issues are also considered by processors as part of supply chain quality assurance programs, and by state governments and local councils as part of land use planning processes (chapter 2). There can be requirements for minimum separation distances to ensure that incompatible land uses are located in a way that minimises impacts caused by noise, odour, air emissions and/or waste discharge. Many state governments also require intensive industries, including sugar mills, piggeries and poultry farms, to be licenced by the EPA or relevant state government department.

There are also a range of industry-specific guidelines, which provide a common framework for managing the environmental issues that arise in certain intensive agricultural industries. For example, there are guidelines for the management of effluent on dairy farms in Victoria (VDEPI 2008). In the pork industry, relevant guidelines include 'the National Environmental Guidelines for Piggeries … , the National Environmental Guidelines for Outdoor Production … and the Piggery Manure and Effluent Management and Reuse Guidelines' (Australian Pork Limited, sub. 37, p. 2).

Operators of intensive agricultural facilities are also required to report information to the National Pollutant Inventory (NPI) if the facility reaches certain prescribed thresholds. The thresholds relate to the quantity of fuel, electricity and NPI substances used by the facility. Facilities that meet the threshold are then required to estimate their emissions annually and report these to a state or territory environment agency, which checks the data and forwards it to the Australian Government Department of the Environment for inclusion on the NPI. Information in the NPI is freely available and accessible to the public.

Any business that uses agricultural and veterinary (agvet) chemicals is also required to contribute, via a levy, to agvet chemical container recycling programs (ACCC 2014e).

Regulations relating to native and feral animals

State and territory governments typically require people seeking to undertake actions that involve, or may involve, native and/or feral animals to obtain a permit or licence (though the species for which licences are required varies). For example, in some states the regulation states that snakes can only be relocated by a person with a snake catcher's permit or reptile removal licence. In south east Queensland, clearing of certain species of trees must be undertaken under the guidance of a koala spotter (Queensland Government 2015c).

State and territory regulations also govern the way in which landholders are permitted to control native or feral wildlife that is causing property damage. For instance in Tasmania, crop protection permits for the control of fallow deer are only issued outside of hunting season (TDPIPWE 2011). In Queensland, commercial crop growers may obtain a 'damage mitigation permit' which allows them to control some (but not all) species of flying foxes provided the permit holder adheres to the *Code of practice: ecologically sustainable lethal take of flying-foxes for crop protection* (QDEHP 2015). Similarly, many states have quotas for the removal of kangaroos and wallabies, and Tasmania has quotas for the removal of common brushtail possums (DoE nd).

Regulation of weeds

A plant is considered to be a weed when it grows where it is not wanted (that means that a plant that is viewed as a weed in one place may not be considered as such in other places). Weeds are typically unwanted because they threaten agricultural productivity, have a detrimental impact on the natural environment or pose a risk to human or animal health.

In many cases, farm businesses have strong commercial incentives to control and remove weeds from their land, because of the damage that weeds can cause to livestock and crop productivity. States and territories nevertheless have a range of laws and regulations relating to weeds. For example in South Australia, if 'a pest is spreading from a property to other areas where it is causing negative impacts, the Minister may "declare" provisions that require a landowner to take action to destroy or control an animal or plant' (South Australian Government, sub. 57, p. 14).

Many biosecurity regulations also aim to limit weed incursions and to control the spread of weeds — these are considered in more detail in chapter 7.

3.3 The effect of environmental regulations on farm businesses

Native vegetation and biodiversity conservation regulations

The Commission heard very little from landholders about the benefits of native vegetation and biodiversity legislation, though some participants were in favour of current arrangements.

> … a large body of scientific research shows that regulation of native vegetation clearing actually benefits agriculture. (WWF Australia, sub. 85, p. 1)
>
> Regulation of land clearing is necessary, proportionate and critical to the long-term viability of agricultural productivity in Australia. (EDOs of Australia, sub. 60, p. 2)

Vegan Australia took a different approach to conservation issues, and suggested that phasing out animal agriculture would promote revegetation and contribute to 'restoring habitat, increasing biodiversity and reducing species extinctions' (sub. 25, p. 5).

Many submissions highlighted the costs to landholders of native vegetation and biodiversity conservation regulations. GrainGrowers surveyed its members and found that environmental law (especially land clearing and native vegetation laws) was the most consistently raised regulatory issue. Comments from members 'centred on environmental regulations being too restrictive, illogical and overlapping/duplicative' (sub. 73, p. 22).

The Australian Farm Institute, commenting on native vegetation laws in New South Wales said that they ' … created a cumbersome and tangled web of productivity-sapping regulations, and tasked an ill-equipped bureaucracy with making decisions that even Solomon in all his wisdom would have found impossible' (Keogh 2014).

A survey of Australian broadacre and dairy farmers conducted in 2011 by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) found that:

- 10 per cent of Australian farmers surveyed intend to clear native vegetation
- just over 30 per cent intended to improve the condition of their native vegetation
- 20 per cent intended to increase its extent
- 12 per cent intended to do both (Harris-Adams, Townsend and Lawson 2012).

However, while the study found that interest in clearing was small relative to farmers' other intentions for native vegetation management at the national level, there was considerable variation between regions.

> Farmers in the Charleville–Longreach and central highlands regions of Queensland and in the central pastoral region of Western Australia showed the most interest; more than 25 per cent of farmers in these regions intended to clear. (Harris-Adams, Townsend and Lawson 2012, p. 17)

Regulations restrict farm operations

Native vegetation and biodiversity conservation regulations can restrict how farm businesses can operate by:

- limiting the amount of land that can be used for agricultural production
- preventing diversification of farm business operations, or the adoption or full exploitation of new technologies (which could, if adopted, lead to efficiency gains)
- preventing effective management of weeds, vegetation regrowth and woodland thickening.

Participants to this inquiry raised concerns in all three areas.

A limited ability to respond to increases in demand for products because of the restrictions on land clearing was a concern of some farm representatives. Canegrowers, for example, said:

> To foster an environment conducive for expansion of the sugarcane industry in Northern Australia, vegetation clearing rules must change. A set of new vegetation clearing laws would need to be harmonised across jurisdictions and must not hinder or unduly restrict the development of new agricultural cropping lands and associated infrastructure. (sub. 22, pp. 4−5)

One farmer of tropical fruits in northern Queensland reported that:

> … 55% of our land has been conserved [as offsets] so that we can farm 17% of our land (Property Rights Australia, sub. 45, p. 13).

Property Rights Australia also claimed that 'some small holdings have given up half or more of their areas in offsets with sometimes onerous conditions attached, in order to gain permits to clear small areas of their farm elsewhere' (sub. 45, p. 5). And Grazier Larry Acton described land clearing rules as 'impractical regulation … that is stifling production' (sub. 55, p. 2).

In New South Wales, the *Native Vegetation Act 2003* applies to native grasslands, even when those grassland are of low conservation value. Byron et al argued that this places 'particularly inappropriate' (2014, p. 19) restrictions on the use of native grasslands for pasture.

The Commission also heard that restrictions on clearing isolated trees or small patches of vegetation limit the efficiency of farming operations and opportunities to adopt precision farming. This reduces the productivity benefits that innovative spatial technologies can provide in terms of reduced soil compaction and reduced water and fertiliser use. One participant advocated a:

> … relaxation of Native Vegetation Laws to allow farmer to tidy their farms when paddock access for modern machinery is an issue due to vegetation or landscape issues (Karen Baines, sub. 13, p. 3)

Submissions to the Agricultural Competitiveness White Paper also highlighted the ways in which native vegetation and biodiversity conservation regulations can hinder the adoption of new technologies.

> Excessive red tape can impact routine improvements on sugarcane (and other) farms, such as clearing a small area for installing a new irrigation system (for example a centre pivot), with potentially significant financial implications. (ASMC 2014, p. 2)

Similarly, in the Bordertown region of South Australia, 'scattered trees on development paddocks were an issue of concern when landholders were planning to install large centre pivot irrigation systems … land clearing restrictions were impeding development plans, potentially affecting returns to investment in centre pivot irrigation' (Mallawaarachchi and Szakiel 2007, p. 2).

Other barriers to the adoption of new machinery and innovative technologies by farm businesses, for example inadequate access to the internet, are discussed in chapter 6.

There is also concern that native vegetation clearing laws impede the ability of producers in regions (such as western New South Wales) affected by woody weeds to control those weeds, limiting their capacity to address this threat to farm productivity (for example, NSW Farmers' Association 2012). As noted by Bartel:

> Although woody weeds cause land degradation these invasive native species have been protected by land clearance legislation … The woody weeds protections are seen to compromise the feasibility of the law in achieving its stated environmental objectives, and are thereby also undermining the legitimacy of the law and of government. (Bartel 2014, p. 900)

And in the context of weed control, the Aerial Application Association of Australia said:

> Often, by trying to comply with the regulatory requirements placed on landholders to manage noxious weeds on their properties, there is the potential for collateral damage on native vegetation co-located with the noxious weeds. Aerial application is often the most efficient means of application of chemicals, but it cannot be undertaken due to native vegetation protection requirements, resulting in significantly lower productivity of significant swathes of agricultural land. (sub. 12, p. 3)

The effect of regulations relating to weed control is discussed further below.

The financial burden on landholders

Where native vegetation and biodiversity conservation regulations require landholders to preserve trees or parcels of vegetation, it is not a matter of simply 'locking up and leaving' that land — ongoing involvement of the landholder is required. The natural ecological succession of native vegetation communities means that active management is required to keep them in preferred states. As the COAG Standing Council on Environment and Water said:

> People play a significant role in the management of native vegetation; particularly private and leasehold land managers and Indigenous Australians as custodians of large land areas across Australia. (COAG SCEW 2012, p. xii)

This can involve significant direct costs for landholders. As the NSW Farmers' Association put it:

> Biodiversity conservation requires active and adaptive management and that in turn, requires human effort and resources. (2014, p. 15)

Costs can be in the form of reduced incomes (and lower property values) for landholders — in the absence of the native vegetation and biodiversity regulations, the land covered by native vegetation or habitats could have been put to more profitable uses. As the National Farmers' Federation (NFF) said:

> Often, the opportunity for farmers to improve their profitability is forgone, due to the regulatory barriers. (sub. 61, p. 11).

A number of inquiry participants claimed that native vegetation and biodiversity conservation regulations curb development. For example, AgForce said that vegetation management laws are seen as:

> … onerous, stifling of profitability and not proportionate to risk … These laws were seen to work to suppress ecologically sustainable development that could support ongoing profitability … and imposed significant real and opportunity costs. These costs were borne largely by landholders, rather than the urban community which also benefits from such public-good-directed policy making (sub. 17, p. 5).

West Wimmera Shire Council considered that the protection of the red-tailed black cockatoo imposes costs on farm businesses in the Wimmera region of Victoria including ' … damage to machinery, reduction in cropping area and therefore yield and chemical wastage' (sub. 49, p. 2). The NSW Farmers' Association said that 'farmers in New South Wales bear a multi-million dollar opportunity cost each year in the interest of conserving environmental assets for the people of New South Wales' (sub. 72, p. 9).

While landowners may benefit from conserving vegetation and biodiversity on their land, they will not necessarily benefit from all of the conservation requirements of regulations, or the benefits of conservation may not outweigh the costs.

Being able to get approval to clear land by purchasing offsets may also not reduce the financial impact on landowners (though it does provide additional opportunities for businesses to earn income by selling offsets to others). Several participants commented on the burden imposed by offset requirements.

> Offset requirements are also onerous if the clearing involves endangered or of-concern regional ecosystem or threatened plant species. This has the ability to impede potential cane industry expansion in Northern Australia (Canegrowers, sub. 22, p. 4)

> A cash payout is sometimes given as an option in lieu of offsets but the sums asked for are in the realms of fantasy and could never be paid off by most agricultural businesses. (Property Rights Australia, sub. 45, p. 5)

Not only do landholders incur direct costs in maintaining land that cannot be cleared or in purchasing offsets, and forgo any income that could be generated from land that cannot be cleared, they do so without compensation. As Finlay put it:

> The clear problem with the current framework of environmental protection is that it imposes substantial restrictions on land use, but fails to provide any compensation to land owners who purchased their land before these restrictions were put in place and who can no longer realize the true productive value of their property. (2015)

While the Commonwealth is required to provide compensation 'on just terms' for property it acquires (s. 51(xxxi) of the Australian Constitution), the compensation guarantee does not extend to the States, and does not cover restrictions to property rights (as opposed to acquisitions of those rights) that are imposed by government policies, regardless of the significance of the restrictions (Finlay 2015).

One of the consequences of loss of productive land is lower property values. While attributing any observed changes in property values to the effects of regulations and to other factors can be difficult, lower farm returns resulting from land clearing regulations would be expected to roughly translate into a fall in property values. According to the Australian Farm Institute, the introduction of native vegetation laws in New South Wales 'decimated the property values of farmers in many regions' (Keogh 2014). Where landholders are required to protect native vegetation on their farm, 'the losses [in land value], or potential increases that cannot now be realised, are common, widespread and often large' (Sinden 2004, p. 222).

In contrast, where remnant native vegetation improves the aesthetic value of a farm, this may lead to an increase in property values (Mallawaarachchi and Szakiel 2007). For example in north-central Victoria, the presence of native woody vegetation was estimated to increase property values, relative to the values of similar properties without any native vegetation, by up to 16 per cent (Polyakov et al. 2015).

The bottom line is that landholders are required to bear the cost of providing many communitywide benefits from better environmental outcomes. While the community may demand better environmental outcomes, because the costs fall on landholders the community is not necessarily aware of the cost of achieving those outcomes. Such an

arrangement is likely to encourage the community to continue to demand greater levels of environmental protection simply because they are not paying for (or not paying the full cost of) that protection. Potential strategies for addressing this are discussed in section 3.4.

Perverse incentives and outcomes

The Commission heard that native vegetation and biodiversity conservation regulations lead to some perverse outcomes, including discouraging or prohibiting landholders from adopting practices that benefit the environment. These concerns can be exacerbated when environmental actions are time sensitive (box 3.5).

Box 3.5 One farmer's experience when trying to improve environmental outcomes

The owner and operator of a large cotton farming business on the Macintyre river in southern Queensland told the Commission about his experience dealing with regulatory agencies and local councils when trying to improve environmental outcomes on his property. A recent flood event led to frog spawning and an increase in the water bird population on the farmer's property. The farmer sought to prolong this natural event by adding water from his farm to the natural flow. Timing was critical because the water from the farm needed to arrive before the natural flow dried up to benefit the bird population.

It took the farmer six weeks to negotiate with multiple agencies (at considerable cost) before permission was granted to supply water for this ecological application. The lengthy delays reduced the effectiveness of the water flow. According to the farmer, each agency was focused exclusively on its area of responsibility, but were unable to work together or with him. For example:

- the authority in charge of stock routes initially rejected the proposal due to its potential to cause erosion, while the local council was concerned with flood risk
- as a result, the farmer had to build a pipeline under a main road to reduce the risk of erosion as well as increase the capacity of the culvert (to allow water flow) that was already in place
- a temporary weir was built at the head of this pipeline to make it more effective, but had to be removed following a complaint from a local resident.

The farmer reported that he had to convince an environment authority of the merits of the proposal. He hired a zoologist at his own expense to monitor bird species before and after the flow. The farmer was required to design the activity to fit within the regional irrigation management plan, and to gain permission from other landholders. He was also required to test the water quality before and after the flow.

According to the farmer, the environment agency insisted that the project be labelled as a 'pilot' so that it did not form a precedent committing them to similar projects in future. The farmer found this frustrating, because he would like to do similar projects more efficiently in future.

Although the flow did eventually take place, its biological effectiveness was reduced by the delay. The experience left the farmer frustrated, and with a sense that regulatory agencies exist to inhibit rather than enable innovative projects.

Source: Productivity Commission case study interview (appendix C).

The NFF claimed that the regulations can prevent 'farmers from changing land use, even where there may be a net environmental benefit resulting from the desired practice change' (NFF 2014a, p. 40). The recent review of biodiversity legislation in New South Wales also found this to be the case.

> The regulatory system for managing native vegetation has led to some significant perverse outcomes. For example, the current way in which the *Native Vegetation Act 2003* is administered does not adequately support rotational farming and management of native grasses and seasonal practices. (Byron et al. 2014, pp. 4–5)

Another perverse incentive created by native vegetation and biodiversity conservation regulations is that they impose the greatest costs on landholders who, by choice or chance, have substantial native vegetation remaining on their properties. Past actions that resulted in native vegetation being well managed are not rewarded.

> … a landholder who may have degraded native vegetation can be rewarded over the landholder who previously managed vegetation well. (NSW NRC 2014a, p. 2)

The regulations can also reduce the incentives for landholders to conserve or re-establish native vegetation (for its own sake or to provide habitat for threatened species), because they fear that changes to that vegetation may be prohibited in the future (NSW Farmers' Association 2014). In some cases, landholders opt to plant exotics instead of native vegetation, so that they can be certain of retaining the authority to remove, harvest or prune those plants in the future (Senate Finance and Public Administration References Committee 2010).

Fears of future changes to native vegetation regulations may also encourage pre-emptive clearing, in which landowners clear vegetation as insurance against future policy changes (AIC 2010). This was recently reported to be occurring in Queensland (Ludlow and Greber 2016), ahead of foreshadowed changes to the laws in that state (section 3.2). In the period 2002 to 2009, when moratoriums on clearing were in place in the Douglas-Daly river catchment in the Northern Territory, clearing rates accelerated rather than slowed, with over 80 per cent of clearing conducted without the required permits (Lawes et al. 2015).

Concerns about perverse outcomes can be compounded when regulations do not allow relevant local factors to be taken into account. A report for the OECD highlighted the:

> … inflexible application of targets and guidelines across regions [of Australia] with differing characteristics such that perverse environmental outcomes sometimes result. (Pannell and Roberts 2015, p. 18)

Perverse outcomes also arise when native vegetation regulations limit landholders' ability to control invasive native species. This is the case for bracken in South Australia, which can only be cleared in limited circumstances without the consent of the Native Vegetation Council, even though it 'has limited biodiversity value, can reduce the productive capacity of cleared land and, in some seasons, may be toxic to stock' (SANVC 2013, p. 1).

In addition, native vegetation regulations can conflict with other important community goals, such as bushfire prevention. Property Rights Australia said that 'many of the legislated guidelines for fire breaks and fire mitigation are inadequate to protect life and property' (sub. 45, p. 8). Echoing this concern, Karen Baines said:

> There should be no consequences to remove vegetation around your family home and provide a decent fire break. 20 metres is nowhere near enough distance. (sub. 13, p. 2)

Perverse incentives can also arise when the costs borne by farmers as a result of conservation laws are larger than the penalties they would incur for breaching those laws. This was the case for a farmer in Victoria who contravened the EPBC Act by clearing close to 450 trees on his property without obtaining approval to do so. Under a settlement reached with the Department of the Environment, he was required to pay $70 000 (or around $150 per tree) (Department of the Environment 2014). However, the Victorian Farmers Federation estimated that each tree can cost farmers up to $355 per year (in both direct costs and foregone opportunities) (VFF 2011).

Similarly, if the steps that landholders must follow to obtain approval to undertake a particular action are too burdensome, the landholder may decide to proceed without approval. The NFF noted that:

> … many farmers are reluctant to go through the process of changing their existing land practices as the regulatory steps that they must undertake are deemed to be too onerous and time consuming … in some circumstances, this has regrettably placed pressure on farmers to take land use decisions into their own hands, with instances of poor judgement leading to convictions or poor environmental outcomes (sub. 61, p. 11).

Rigid administration

Participants raised a number of concerns about the approach taken by the government departments and agencies charged with the administering these regulations. While states' native vegetation legislation typically seeks to promote the social, economic and environmental interests of the state, in some states the administration of native vegetation regulations is delegated to regulators who take a lexicographic approach to environmental protection — that is, they are unwilling to consider any trade-off between environmental, social and economic outcomes, even when small amounts of environmental harm result in much larger social or economic benefit. On this note, the Tasmania Farmers and Graziers Association said that:

> There seems to be a mindset within some parts of government that they must set the highest regulatory standards anywhere in the world regardless of the science and the impact on farm businesses. (sub. 16, p. 3)

Concerns about the rigid interpretation of native vegetation regulations were supported by a survey of broadacre and dairy farmers conducted by ABARES in 2011, which found that 42 per cent considered that native vegetation regulations lacked flexibility and/or clarity (Harris-Adams, Townsend and Lawson 2012).

The lack of clarity surrounding native vegetation regulation is exacerbated when the information upon which decisions are based is not sound. The Commission heard that errors in native vegetation mapping are not uncommon.

> Our family purchased land in the Whitsunday Shire of which areas were heavily infested with noxious weeds. We had to engage a consultant at a cost of $10 000, plus $10 000 of our time because the PMAV (Property Map of Available Vegetation) was grossly wrong. $20 000 down the drain for permission just to clear noxious weeds through no fault of our own. (Andrew Rea, sub. 9, p. 2)

Another example is a recent analysis of the vegetation mapping in the Upper Hunter Valley of New South Wales, which found that the majority of vegetation types 'are mapped with such a low level of accuracy as to not satisfy the requirements of local planning for development, conservation and offset initiatives' (Hunter 2016, p. 43).

The Australian Centre for Agriculture and Law said that 'native vegetation control is an area of regulation that often involves cumbersome administration, where attention to reducing the avoidable bureaucracy could result in more efficient laws without undermining the purpose of those laws' (sub. 2, p. 2). In a similar vein, inquiry participants noted an absence of trust between landholders and regulators (box 3.6). Many also expressed concerns about the enforcement of native vegetation and biodiversity conservation regulations (box 3.7).

Complex, confusing and duplicative processes

Many landholders also consider native vegetation and biodiversity conservation laws to be:

- overly complex and process driven (NSW OEH 2015)
- confusing and cumbersome (NFF 2014a, p. 16)
- focused on micro-management of individual plants and properties (NSW Farmers' Association 2014, p. 4).

Burdekin Shire Council (Queensland) said that ' … the overall legislative framework is very restrictive and expensive. It is difficult to understand for investors' (sub. 35, p. 2). The Consolidated Pastoral Company considered that there is a need for 'rationalisation of the maze of environmental laws' (sub. 71, p. 4). And, according to Byron et al., in New South Wales, native vegetation laws:

> … create a complex system that is difficult for the community to navigate, has imposed unnecessary regulatory burdens, especially in certain regions and sectors across the state, is process driven and not fulfilling current objectives in the most effective and efficient way. (2014, p. 4)

Box 3.6 An absence of trust between landholders and regulators

When it comes to natural resource management, rural landholders do not always trust government agencies and staff — an underlying distrust of government information and assistance has been reported in many situations (Meadows, Emtage and Herbohn 2014). Curtis et al. found that there is evidence that government staff engaged in natural resource management ' … have different values (i.e. much greener) than the rural landholders they are attempting to engage and this difference in values is likely to lead to distrust unless acknowledged and addressed' (2014, p. 189).

The lack of trust in local regulators is a recurring theme:

> Many do not trust their [Local Land Services] officers enough to ask for advice and preferred to 'keep under the radar,' believing that their properties would be watched even more closely if any contact was made. [Local Land Services] staff also commented on the lack of trust and how difficult their job was, given the adversarial and inflexible nature of the Act. (Evidentiary 2014, p. 23)

> Many farmers have a very poor relationship with Native Vegetation regulators and this has made it hard [for] the NRM (natural resource management) groups to establish supportive, productive relationships with farmers and land management. (Karen Baines, sub. 13, p. 2)

The NSW Farmers' Association suggested that it is the native vegetation regulations themselves that reduce farmer's willingness to seek external advice:

> … farmers' reluctance to engage with advisory services or even in explicit conservation management for fear of locking up land which may be in the better utilised in production have origins in the impositions created by the [Native Vegetation] Act. (sub. 72, p. 11)

Inquiry participants emphasised the need to build the capability of, and trust in, regulators.

> The fundamental injustice of [native vegetation laws], in addition to uncertainty about the future direction of native vegetation laws, fosters a distrust of government and any associated conservation or ecological outcomes … the current context is one of distrust, unwillingness, disconnect and confusion. (NSW Farmers' Association, sub. 72, pp. 9–10).

> Good public policy requires ownership by those that it impacts, failure to achieve that goal results in poor policy outcomes. (Tasmanian Farmers and Graziers Association, sub. 16, p. 3)

Several participants questioned whether or not they could influence the outcomes of processes that affected them. One submission stated that 'the green decision was already made' (Ronda and Allen Harmer sub. 15, p. 1). Other participants echoed this concern, and noted that regulators in many jurisdictions are inclined to prohibit every action that could possibly affect biodiversity, regardless of the potential benefits of those actions. The perception that government agencies favour environmental outcomes over agricultural production can be compounded by the dual role of those agencies: in many cases agencies must balance two conflicting roles.

> While cooperative approaches are appropriate, regulators must enforce legal obligations where cooperation and collaboration has failed to protect land. (EDOs of Australia, sub. 60, p. 3)

Box 3.7 Variable enforcement of environmental regulations

Insufficiently rigorous enforcement?

Several inquiry participants commented on the enforcement of native vegetation and biodiversity conservation regulations. For example, Graingrowers expressed 'concerns with how environmental regulations are enforced, including problems with some farmers getting away with non-compliance' (sub. 73, p. 22).

In many instances smaller lifestyle farms and 'tree changers' close to urban areas are a source of weed infestations and feral animals that reduce productivity on adjacent commercial farms. Such poor land management practices often arise from ignorance (Luck, Race and Black 2011) or through the absence of financial incentives (if landholders are not engaged in agricultural production, they do not reap the productivity benefits of controlling invasive plants and animals). However, there may also be a reluctance on the part of local councils and other government agencies to undertake enforcement actions in such cases.

Overly rigorous enforcement?

In contrast to concerns about inadequate enforcement, the Commission heard from other participants that governments take an overly punitive approach to enforcing native vegetation and biodiversity conservation regulations.

> Strict enforcement and penalty provisions have created an adversarial climate between landholders and government and eroded landholder goodwill (NSW Farmers' Association, sub. 72. p. 12)
>
> With the seemingly limited resources and effort being put towards education, the current approach to landholder education appears to revolve around executing enforcement cases. This approach yields poor environmental outcomes, since if enforcement proceedings are required it is effectively too late. (VFF 2014b, p. 30)
>
> There have also been ill advised and/or malicious prosecutions of landowners which have had no chance of success but left the defendants broke and broken. (Property Rights Australia, sub. 45, p. 2)

A commonly cited case is that of Peter Swift of Manjimup, Western Australia, who faced a prolonged and expensive legal battle after he was accused by the former Department of Environment and Conservation (Western Australia) of illegally clearing 14 hectares of native vegetation in 2007–09. Mr Swift was not convicted.

AgForce said that in Queensland:

> … the rapid reversion from non-coercive policy instruments for vegetation management (information, extension, education), to coercive policy instruments (legislation, compliance, enforcement) has impaired the relationship between State Government and landholders. (sub. 17, p. 13)

Also, that its members expressed concern that they had:

> … applied for and in many cases received permits to clear High Value Agricultural (HVA) land. The Compliance Division in the Federal Department of Environment sent a letter to many of the HVA permit holders enquiring into their recognition of and need for compliance with the EPBC Act. The letter mentioned the severe penalties for breaches of the EPBC Act (sub. 17, p. 24)

The House of Representatives Standing Committee on the Environment also found that there have been cases:

> … where federal environmental laws were administered in a perhaps more punitive fashion than may have been necessary, particularly when communicating with the farming community when there is a breach of the EPBC Act. (HoRSCE 2014, p. 84)

There are also concerns about the accuracy of data used for compliance monitoring.

The NFF said that landholders' awareness of environmental regulations is low.

> For farmers, awareness of their specific responsibilities under any environmental law is around 30 per cent, with this awareness level focused on state-based regulation. There is confusion that is generated by a lack of harmonisation between State and Commonwealth laws. Despite any good intentions farmers might have to comply with the regulation, awareness and confusion often results in inadvertent non-compliance with the law. (sub. 61, p. 10)

The Pastoralists and Graziers Association of Western Australia said that 'some landowners and landholders may be unaware of some or all of these [environmental] restrictions and could unwittingly break the law' (sub. 70, p. 3).

Primary Producers South Australia considered that native vegetation regulation in that state is 'regarded by the majority as expensive and bureaucratic' (sub. 41, p. 2). This perception arises because permit applications must typically include a description of the type and amount of native vegetation to be cleared, an aerial photo or site plan illustrating where the native vegetation exists, which sections are proposed for removal, methods proposed to minimise the amount that needs to be cleared and actions proposed to offset the clearing that goes ahead (Bricknell 2010).

AgForce provided the example of a:

> … property of 16,000 ha north-west of Charters Towers with 1,000 ha previously cleared and 750 ha of new clearing proposed for improved pastures, the total costs of compliance including expert advice is estimated at $17,091, close to double that required in 2003. On this same example property, if the owner applied to clear 550 ha for High Value Agriculture fodder cropping to aid dry season and drought mitigation, the compliance costs are estimated to be $24,161. In total for both projects and including the on-ground costs of compliance, the final cost of regulation to the landholder will be well over $50,000. (sub. 17, p. 6)

Many inquiry participants also commented on the duplication that exists in environmental regulation (box 3.8).

Overlap and duplication in native vegetation and biodiversity conservation regulations contributes to slow decision making timeframes. While decisions under the EPBC Act must be made within six months, there is no set timeframe for decisions under many state native vegetation laws. This can compound the effects of the regulations on farm businesses, as 'seasonal production cycles are broken or missed because of uncertainties arising from complex and unclear legislative requirements' (NFF 2015c, p. 7). For sheepmeat producers, the: 'regulatory uncertainty and time delay in getting approval for vegetation and water management activities were significant costs to their business' (Sheepmeat Council of Australia and Cattle Council of Australia, sub. 88, att. 1, p. 28). The Limestone Association of Australia also commented on the delays caused by environmental regulations.

> Proposals for new and expanded mines and quarries which service agriculture such as limestone and gypsum need to be expedited and not held up indefinitely over environmental and native title issues. (sub. 48, p. 2)

Box 3.8 Duplication of environmental regulations

Duplication was a source of considerable concern for many inquiry participants. GrainGrowers said that:

> While some efforts have been made to reform the *Environmental Protection and Biodiversity Conservation Act 1999* (Act), there remains problematic overlaps and duplication in the environmental framework (including Federal, state and local government restrictions) that grain farming businesses operate in. (sub. 73, p. 23)

Canegrowers said:

> The regulatory burden associated with clearing sufficient remnant vegetation to support a sugarcane mill and a critical mass of sugarcane area (up to 30,000ha) is cost prohibitive (particularly if offsets are required). The regulatory process is very complex, involving separate pieces of legislation and differing state government departments. There are also different approaches to native vegetation protection across the Queensland, Northern Territory and West Australian governments. To foster an environment conducive for expansion of the sugarcane industry in Northern Australia, vegetation clearing rules must change. A set of new vegetation clearing laws would need to be harmonised across jurisdictions and must not hinder or unduly restrict the development of new agricultural cropping lands and associated infrastructure. (Canegrowers, sub. 22, pp. 4–5)

Similarly, the Consolidated Pastoral Company said that it is 'required to comply with, or take account of, at least 46 separate environmental Acts and regulations across four legal jurisdictions in the management of its properties' (sub. 71, p. 4). The Australian Food and Grocery Council deplored ' … inconsistencies between threatened species and ecological communities at a state and federal level which have delayed and/or stalled development processes such as approvals to clear patches of native vegetation' (sub. 28, p. 11).

The National Irrigators' Council recommended the:

> … removal of duplication in relation to environmental regulation at a state and Commonwealth level that impedes innovation and restricts irrigated agriculture producers in achieving triple bottom line outcomes (National Irrigators' Council, sub. 18, p. 4)

However, the Australian Network of Environmental Defenders Offices cautioned that claims of duplication are not accurate where different laws address different issues.

> In some cases, [federal and state laws] are assessing the same projects but they are not necessarily assessing it from the same angle or for the same reasons. State processes do not assess projects from the perspective of World Heritage protection (HoRSCE 2014, pp. 26–27).

To the extent that the goals of different regulations differs, having separate systems to deliver on those goals may be reasonable. However in many cases there is scope for governments to work together to implement regulations in ways that minimise duplication.

Other concerns relating to the EPBC Act

Awareness of the requirements of the EPBC Act

There are issues around the extent to which farm businesses are aware of the requirements imposed by the EPBC Act, which 'like most important legislation, … is long and can be difficult for the lay reader' (Law Council of Australia 2014, p. 5). The House of Representatives Standing Committee on the Environment, for example, noted that there have been ' … cases where members of the farming community were not well informed of

their obligations under federal [environmental] regulations' (HoRSCE 2014, p. 84). The Department of the Environment also acknowledged that:

> … some farmers may not refer actions that should be referred. Typically this is due to a lack of knowledge about requirements under Commonwealth environmental law. (sub. 80, p. 7)

In addition, according to the NFF, even those landholders who are aware of the EPBC Act can struggle to keep up with ongoing changes.

> … as the footprint of environmental laws is extended with new listings — an activity that does not require consent today may require approval if a new listing comes on line. This results in considerable confusion for farmers. (sub. 61, p. 10)

Some producers told the Agricultural Competitiveness White Paper that more needs to be done to inform landholders about the restrictions imposed by EPBC Act, ideally at the time of land purchase (for example, Gabb 2014).

The Victorian Farmers' Federation (VFF) said:

> Landholder knowledge of the EPBC Act and the complex array of listings is very limited. New listings are added to the EPBC regularly and limited effort is made to educate landholders on the listings … A much stronger focus on education and incentives will result in much better environmental outcomes. (2014b, pp. 29–30)

As noted in chapter 2, jurisdictions may wish to consider programs to educate prospective land purchasers about the realities of farming practices. This could include providing information about the ways in which environmental regulations (including the EPBC Act but also state and territory native vegetation and biodiversity conservation regulations) can restrict those practices.

Burden imposed by the EPBC Act referral process

As noted above, the EPBC Act primarily affects farm businesses when they plan to clear native vegetation or undertake development that could affect plants or animals that have been listed as threatened under the EPBC Act. Landholders must refer proposed actions (such as land clearing, construction or changes in land use) to the Australian Government Department of the Environment if those actions could affect any matters of national environmental significance.

When deciding whether or not to refer a proposed action, landholders must determine whether the changes they want to make are likely to have a significant impact on any species and ecological communities listed under the EPBC Act (there are hundreds listed), or could otherwise affect a matter of national environmental significance (for example, an increase in the runoff of fertilisers or pesticides could affect the Great Barrier Reef or a listed wetland). As the NFF said:

> In essence, the [EPBC] Act requires a farmer to self-assess whether the proposed activity will have a significant impact. (sub. 61, p. 10)

There is some guidance provided by farm organisations (for instance WA Farmers 2014), and the Department of the Environment has created an internet search tool that provides details of matters of national environmental significance for each postcode or local government area (DoE 2015c). But according to landholders, the available information is often not sufficient for them to fulfil their obligations under the EPBC Act. As an example, knowing that the critically endangered Regent Honeyeater's habitat includes the municipality of Ararat in Victoria does little to assist a landholder in Ararat when the honeyeater's habitat extends over much of south-eastern Australia, and the land in question may not contain any of the species that honeyeaters use for food or nesting.

Farmers often need to engage specialist advice in order to complete the 'self-assessment'. As the VFF said:

> Farmers are required to self-assess whether actions will have a significant impact on listed matters that often only a very select number of specialist scientists would even be able to identify. The highly specialised knowledge required to comply with the EPBC Act usually means undertaking developments can be very costly, since consultants are often required to even find out whether an ecological community is present. (2014b, p. 28)

In addition to their cost, consultants' reports can easily run to dozens of pages, even when the proposed action is relatively minor (for example, clearing five trees, box 3.9).

Box 3.9 Hurdles faced by a proposed blueberry farm in New South Wales

The National Farmers' Federation provided an example of the actions a farmer must take in order to be confident that they are acting legally under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act):

> … a detailed referral process must be completed to ascertain whether their actions will significantly impact a listed matter. This detailed referral process requires providing independent technical reports and a period of public comment on the proposed activity.
>
> An example of this is of a landholder seeking to clear 1.2 hectares of land near Coffs Harbour NSW for a blueberry farm. The clearing was considered to be clearing of 'regrowth' under State native vegetation laws, and as such no state approval required. However, the proposed clearing area included one EPBC listed threatened plant species and potential habitat for six EPBC threatened animals or birds. The proposed clearing action was going to remove 5 plants in the 1.2ha area, and it was estimated that there was 6270 plants on the total property.
>
> The landholder did the 'right thing' referring the development to Commonwealth to determine whether Federal Environmental approval was required. This referral required the following details:
>
> - 19 pages application information
> - an Independent expert report on proposed environmental impacts – which included 22 pages detailed text, 18 [geographic information system] maps, 19 pages of detailed list of potential species on sit and likelihood of occurrence site
> - a period of public comment.
>
> The outcome of the referral was that the action was 'not controlled' and as such Commonwealth Approval was not required.

Source: NFF (sub. 61, p. 10).

The NFF (sub. 61) and Graingrowers (sub. 73) argued that a more streamlined process for seeking formal advice as to whether the proposed activity is significant and what will actually trigger the EPBC Act is required.

The burden imposed by the referral process — and the need for consultant's advice — depend on the number of listed species and geographic areas. The Tasmanian Farmers and Graziers Association said:

> There is an implicit assumption in the EPBC [Act] that threatened species and/or ecological communities can and should be protected, no matter the cost or the consequences. Recent scientific debate suggests that this assumption requires much more rigorous testing; and it is important to recognise that such aspirations are not always desirable or attainable. (sub. 16, p. 6)

The Tasmanian Farmers and Graziers Association therefore considered that 'there are a number of significant failings' with the EPBC Act (sub. 16, p. 6).

The National Irrigators' Council (sub. 18, p. 4) expressed concern that the listing of the Murray River and the Macquarie Marshes as 'critically endangered' under the EPBC Act occurred without community consultation or a clear rationale. (However, the listing of these areas was subsequently disallowed by the House of Representatives.) It advocated 'amendments to the EPBC Act that guarantee that, prior to any new listings being made, key stakeholders, including [the National Irrigators' Council] are consulted at the commencement of the process' (sub. 18, p. 4).

The effect of other environmental regulations on farm businesses

Pollution control regulations and reporting

Pollution control regulations can impact on the efficiency and productivity of certain agricultural industries, particularly intensive animal industries. The Australian Chicken Meat Federation, for example, said that chicken businesses are required to provide site-specific odour modelling 'requiring the use of consultants to develop technically complex atmospheric models around site data' (sub. 40, p. 2).

Engaging environmental consultants to obtain the necessary approvals for pollution control regulations can be costly for farm businesses. A sandalwood producer in Western Australia reported that building a new waste water pond cost around $14 000, while consultants' fees for the project were over $20 000 (Government of Western Australia 2009, p. 128).

Cotton Australia expressed concern about the effect of air quality regulations on cotton processing (box 3.10).

Box 3.10 **Regulation of dust from cotton gins**

Cotton Australia said that it:

> … has become aware of examples of where environmental regulations appear to lack the flexibility required for local conditions. One such example involves the rules around dust emissions coming from cotton gins. Gins are first stage processing infrastructure which separates cotton lint from seed. They exist across regional cotton growing areas in Australia.
>
> One of the reasons for ginning is to remove dirt (dust) from cotton lint. In many gins, this dust is discharged through devices called cyclones. In NSW, pollution licensing requires dust pollution to be measured at each point source, in this case each cyclone (and a gin has many).
>
> The problem is that the licensing requirements cannot take into account the average dust emission from all the cyclones. So, if one cyclone has a high reading, and all others are below the maximum the gin is not compliant. This does not make sense, as the total dust load out of the gin is below the license requirements, and the very nature of the ginning process means some cyclones will have a higher dust load than others.
>
> The unreasonable nature of the licencing requirements is further highlighted by the fact that a gin could meet the licencing requirement by blowing more air through the cyclones, still emitting the same total amount of dust, but reducing the concentration. The greater airflow can only be achieved with greater energy consumption, which is of course completely counterproductive, but would allow a gin to meet license requirements.
>
> A further side to this example is that the allowed dust limits, which may be entirely reasonable in a coastal city environment, can be lower than the ambient dust levels in areas where cotton gins are located. Rural areas where windy days often produce raise dust, and that the dust is simply dirt and plant matter that comes from the local environment (on-farm) in the first place.

Source: Cotton Australia, sub. 23, pp. 10–11.

Pollution control regulations can vary depending on the intensity of agricultural production, with more stringent regulations applying to businesses that exceed certain thresholds (chapter 2). The Australian Chicken Meat Federation suggested that pollution control regulations are rarely designed with agricultural industries in mind. They 'lump animal agriculture in with other non-agricultural, industrial pursuits, with little regard for the inherent differences between these industries, particularly that agricultural industries are dealing with biological processes' (sub. 40, p. 5).

Australian Pork Limited suggested that all jurisdictions should revise their legislative arrangements relating to environmental management 'to have an overarching outcomes-based framework and to formally incorporate national industry guidelines' (sub. 37, p. 2).

Inquiry participants did not draw the Commission's attention to the cost of environmental licensing, despite the not inconsiderable nature of those costs. For instance, in Queensland, annual sugar milling licences for those crushing or grinding 200 tonnes or more of sugar cane cost close to $12 000 (QDEHP 2016).

In addition to pollution control regulations, there are also a range of pollution control reporting requirements. The Western Australian Government noted that environmental monitoring, reporting and auditing schemes can be 'cost-intensive' (sub. 54, p. 16).

The Australian Food and Grocery Council (sub. 28) expressed concern about duplication in environmental and pollution control reporting requirements. And several participants raised concerns about the public accessibility of farmers' location and contact details, given the public nature of the NPI. For example, the Australian Chicken Growers' Council said that:

> … [NPI] reporting entities have their farms identified on Google earth with their address and contact details unless they have nominated their state organisation to represent them which removes their contact details but not the farms location on Google earth. This exposes the farm to the possibility of bio-terrorism and unwarranted attention from groups opposed to intensive farming. (sub. 51, p. 5)

The Commission has previously noted that 'the geographic basis of reporting need not necessarily be at the facility level' and that some aggregation of individual facilities' data 'may well be desirable where there are real concerns about the harassment of businesses' (PC 2007, p. 63). That said, aggregation of data risks reducing the value of the information available to the public and the incentive for businesses to reduce their emissions. Any trade-offs in information availability should only be made after a full assessment of the costs and benefits. Other concerns relating to harassment of businesses (such as illegal trespass) are discussed in chapter 7.

The effect of weed control regulations

Farm businesses undertake weed control activities because doing so has benefits to the business, through maintaining product quality or production volumes. But failure to manage weeds can have negative impacts. For example, allowing an infestation of crow garlic (*Allium vineale*) to persist would have serious business effects, as milk and meat products from stock grazing pastures infested with crow garlic become tainted and unfit for sale (TDPIPWE 2014a).

There are limited data on the burden imposed by weed control regulations. Data on farm business expenditure on weed control, though dated, show that agricultural businesses spent approximately $1.6 billion on weed control in 2006-07. The management of weed-related problems involved in excess of 4 million person days (or 31 person days for each agricultural business that engaged in weed control), corresponding to an average effort of 14 person days per 1000 hectares (ABS 2008). More recently, AgForce said 'Queensland graziers and grain producers spend an average $20 000 in labour, up to $27 000 in herbicides and machinery and invest more than 47 days each year in managing weeds. Control of invasive woody weeds like prickly acacia, rubber vine, bellyache bush and breadfruit can add an additional $16 000 to annual weed control costs' (2015, p. 24). While a large part of this activity was undertaken by farm businesses for their own benefit, a small proportion was likely to be in response to weed control regulations.

Inquiry participants did not raise concerns about the burden imposed by weed control regulations. In fact, one participant said 'regulations preventing the spread of weeds are a cost-effective approach to managing the damage caused by invasive plant species' (EDOs

of Australia, sub. 60, p. 3). This support is in line with participants' recognising the benefits they obtain from Australia's biosecurity system (chapter 7). The Australian Centre for Agriculture and Law said:

> Regulatory control of agricultural invasive species may impose a cost or constraint on some landholders, but it reduces economic losses and costs to other landholders as well as producing public good benefits. (sub. 2. p. 1)

However, the Aerial Application Association of Australia highlighted the tension between weed control and native vegetation conservation requirements:

> Resolution of this tension could be achieved by a clear statement on labels or in control-of- use legislation that gives primacy to the noxious weeds objective over damage to co-located native vegetation. (sub. 12, p. 3)

Others pointed out that the burden of weed control can be exacerbated when government managers of neighbouring land do not manage weeds in the most effective manner.

> Vegetation along roadsides needs urgent attention. It's difficult to move machinery down the roads without causing damage. The council spend thousands of our rate payer dollars every year cutting back the vegetation to keep the greenies happy, only to have it grow back the next year! What a waste of our money! A direct squirt of round up would keep it down and cost an awful lot less. (Karen Baines, sub. 13, p. 2)

> Next to our place on the Fitzroy River is a Camping and Water Reserve area of Crown Land. Neither the Local Council or the State Government have made any attempt to control the weed infestation on that Crown Land, but they have tried to force us to allow them to inspect our land for similar pests. (Larry Acton, sub. 55, p. 2)

A survey of farmers in central and western New South Wales also found that:

> A significant number of farmers felt let down by government and considered its actions were often hypocritical. To many farmers, the standard of management of public land failed to meet that required of private land owners. In many instances this public land was seen as infiltrated by noxious weeds and animals and had insufficient annual hazard reduction burning undertaken, thereby putting public and private land under threat. (Finlay 2014, p. 254)

Indeed, the view that governments are failing to meet their responsibilities in relation to control of invasive species on public land has been expressed at numerous junctures over many years (for example, in Cocklin, Dibden and Mautner 2003; NSW NRC 2014b; PC 2004a). The Sheepmeat Council of Australia and the Cattle Council of Australia said that 'incentives and sanctions should extend to public land managers' (sub. 88, att.1, p. 27).

The effect of regulations relating to native and feral animals

As is the case with weed control, farm businesses control many feral, and some native, animals because doing is necessary for the ongoing viability and success of the business. As one farmer put to the Agricultural Competitiveness White Paper:

> We love the land that we farm and we look after the land to the best of our ability in managing environmental damaging weeds and feral pests such as wild dogs, camels, foxes and rabbits etc. (Nicholl 2014, p. 4)

These actions are often necessary in order to maintain farm production. The Department of the Environment gave the example of feral pigs, which:

> … cause substantial production losses to sugar cane and bananas in north Queensland, costing hundreds of thousands of dollars to the respective industries. It is estimated that the economic cost of feral pigs in Australia is $106.5 million per year. Feral pigs also pose a major threat to biodiversity [through] predation, habitat degradation, competition and disease transmission … (sub. 80, p. 2)

Dr John Cooke (sub. 30) emphasised that the cost of controlling rabbits and other pest animals can be substantial.

As noted in section 3.2, a range of state and territory regulations govern the way landholders are permitted to control native or feral wildlife that is causing property damage. When regulations restrict agricultural producers' ability to control feral animals, this can have substantial effects on their business. For example in Tasmania:

> The population of fallow deer, originally introduced to Tasmania for hunting, has expanded to an estimated 25,000 and is predicted to increase by up to 40% in the next decade. The impacts of the species on agricultural land, in wilderness areas and on other native species warrant strategic management. However, the species is currently protected under the *Nature Conservation Act 2002* (Tas) and can only be taken in limited numbers under a permit. The current permitting system does not allow land managers to respond efficiently to the problems posed by deer. EDO Tasmania is regularly contacted by farmers and Landcare organisations troubled by the limited options available to deal with the species. (EDOs of Australia, sub. 60, pp. 13–4)

Participants also stressed the importance of ensuring that regulators continue to allow them to control native animals. Voice of Horticulture said that it:

> … recognises that regulation is required to ensure survival of species and habitats but compromises need to be made to ensure the ongoing viability of fruit and vegetable growers. Perhaps regulation needs to be re-written to recognise and offset harsh socio-economic impacts on growers … In Queensland there is a Code of Practice for the control of flying foxes which underpins access to Damage Mitigation Permits (DMP) and it is vital that continued access to DMPs remains until a non-lethal alternative is available. (sub. 42, p. 8)

The NSW Small Business Commissioner raised an issue relating to the harvesting of kangaroos and other macropods:

> … multiple licences are required and that hunting and processing must be conducted in the same state jurisdiction. This poses particular issues for businesses operating over state borders and where the closest processing facilities are located over the border. (sub. 4, p. 3)

Property Rights Australia (sub. 45) also raised macropod quotas as an issue. In Tasmania, the record-keeping requirements for permitted wallaby culls are so onerous — requiring farmer to keep up to 600 separate records per year — that 'it is highly unlikely that the annual figures provided by farmers to the regulator accurately reflect the actual count of wildlife culled over the previous year' (DPIPWE Tasmania, sub. 62, att. 1, p. 19).

Another issue raised by participants was access to state and national parks for commercial honey bee operators (box 3.11).

Box 3.11 **Regulating beehives on public land**

An issue of particular concern to the honey bee industry was obtaining sufficient access to state and national parks in the face of increasing demand. An apiarist from New South Wales said:

> Most beekeepers are not prepared to expand their hive numbers to cater for this increased demand by almond pollination. Primarily because there is a lack of resource to support these extra hives. The lack of resource is due to current state legislation that prohibits beehives being in National Parks and some other crown lands. Beehives are allowed in some very limited areas in some National Parks (a long and complex story). Farmers are clearing eucalypt and mallee trees to supposedly make their farms more efficient which is reducing the available resource to beekeepers. Most eucalypt trees are found on public lands. (Stephen Targett, sub. 5, p. 3)

Submissions to the Agricultural Competitiveness White Paper also raised this issue:

> About 80 per cent of the honey produced by the Australian beekeeping industry is derived from native plants flowering on public and freehold land. Problems of access to some public land tenures and the long-term sustainability of forests/woodlands are ongoing challenges for the industry. This issue … is arguably the most significant faced by commercial beekeepers. (Wheen Bee Foundation 2014, p. 11)

Thinking about how best to address these concerns, it is important to understand that national parks are 'not national at all but managed according to a wide range of legislative measures, objectives, priorities and management systems' (NPAC 2012, p. 5). As such, there could be scope for jurisdictions to adopt management practices and approaches used successfully in other jurisdictions.

3.4 Addressing issues in environmental regulations

The analysis and participant feedback discussed above suggests that there are significant and systemic burdens associated with native vegetation and biodiversity conservation regulations across all levels of government. To address these complex and overlapping issues and concerns, coordinated action in four areas is required. There is a need to:

- continue efforts to reduce regulatory overlap and duplication
- fundamentally change some jurisdictions' native vegetation and biodiversity conservation regulations
- improve the administration of environmental regulations (and, in some cases, change the ways in which regulators work with landholders and the community)
- make use of market-based approaches to native vegetation and biodiversity conservation.

Improvements in these areas are discussed in more detail below.

Costs could be reduced and effectiveness improved if regulatory regimes followed regulatory practices that promote transparency and accountability (chapter 14). This includes considering the communitywide costs and benefits of environmental policies before adopting the policies, as part of regular policy reviews, and when circumstances change (including climatic circumstances which may make previously attainable goals unattainable).

Reducing regulatory overlap and duplication

Complex and overlapping regulations place a burden on landholders, and can limit the effectiveness of the regulations. As Byron et al. said:

> … too much 'red tape' alienates the very people whose cooperation is essential for great biodiversity outcomes' (2014, p. iv).

Where different regulatory requirements are inconsistent, or could be perceived to be inconsistent, it is essential that regulators provide guidance on how to reconcile the (perceived) inconsistency, and what actions are permitted under all relevant regulations (regardless of which level of government imposes them). AgForce recommended 'that the Queensland Government and Australian Government divisions responsible for vegetation management legislation communicate more effectively and align requirements for information from landholders to enable more streamlined assessment and compliance with respective regulatory frameworks' (sub. 17, p. 25). Improving communication with landholders is discussed in more detail below.

Several initiatives are already underway to remove red tape and streamline processes, including:

- consistent assessment processes for the listing of threatened species
- one-stop shops for environmental assessments and approvals.

Consistent assessment processes for the listing of threatened species

In July 2015 the Environment Ministers of the Australian, state and territory governments agreed to progress an intergovernmental memorandum of understanding to implement a common assessment method for listing nationally threatened species, and where agreed, ecological communities (DoE 2015b). Memoranda of understanding have since been signed between the Australian Government and the governments of Western Australia, the Australian Capital Territory, Northern Territory and Tasmania, with other jurisdictions expected to follow (Department of the Environment, sub. 80). Aligning assessment processes is meant to reduce duplication and increase consistency between jurisdictions' threatened species lists.

While the principle of using common methods to assess species for listing is sound, aligning regulatory methods can be complicated, administratively costly and politically difficult. The method agreed on should achieve a reasonable balance, and not result in convergence to highest standard (unless that standard is justified on cost–benefit grounds), a point emphasised by the Tasmanian Farmers and Graziers Association:

> Humans will continue to undertake activities that have adverse environmental impacts – and of course they should seek to avoid and mitigate these wherever possible. However, pragmatically, it is also important to accept that some level of residual adverse environmental impact is unavoidable and a part and parcel of our existence as a species. These adverse impacts [on the environment] cannot realistically be compensated for in any meaningful way; and listings need to be reviewed regularly to ensure that they bear up under contemporary scrutiny and community expectations. (sub. 16, p. 6)

It is also important that governments retain a focus on the efficiency of governance and decision-making processes relating to threatened species, regardless of the degree of scientific agreement on methods, or the level of data available at a point in time.

One-stop shops for environmental assessments and approvals

Since 2013, some of the duplication in environmental assessment and approval processes has been removed through the creation of 'one-stop shops'. Under the one-stop shop system, the Australian Government and state and territory governments enter into bilateral agreements for the assessment and/or approval of 'an activity [that] is being managed by a state or territory government and is likely to have an impact on a matter of national environmental significance' (Department of the Environment, sub. 80, p. 11). The intended effect is to create a single assessment and approval process for most project proponents.

The Commission has previously found that one-stop shops offer 'significant potential to reduce coordination costs and provide greater certainty and clarity about the regulatory framework' (PC 2013a, p. 154), while recognising that they will not be suited to every circumstance.

Despite their general benefits, current one-stop shop arrangements are likely to have little tangible impact for most farm businesses, given the small number of agricultural projects that proceed to the assessment stage of the EPBC Act. As Australian Pork Limited stated:

> … because relatively few development proposals involving intensive animal industries trigger the need for assessment against [the EPBC] Act, a 'one stop shop' will do little to simplify and expedite the assessment process (sub. 37, p. 3)

Several participants (including Graingrowers, sub. 73; NFF, sub. 61; VFF 2015) suggested that one-stop shops should be extended to cover on-farm activities or the initial stages of project assessment (such as the referral stage of the EPBC Act). While this proposal could have benefits to farm businesses, those benefits will depend on one-stop shops being fully established and operating effectively. Waiting for this to occur before including other activities in the one-stop shops would therefore be sensible. In addition, as many native vegetation and biodiversity conservation regulations need fundamental reform, there would be little potential benefit from extending one-stop shops based on current arrangements.

A case for changing the approach

Some of the concerns about native vegetation and biodiversity conservation regulations expressed in section 3.3 reflect problems that are inherent in those regulations. In particular, it is inevitable that native vegetation regulations have few effects on landholders who have little native vegetation remaining on their properties, and have a much larger effect on those who, by choice or chance, have substantial native vegetation remaining on their properties. However, there is scope to change the approach used to address other problems with native vegetation and biodiversity conservation regulations. In the Commission's view, conservation regulations should:

- be risk-based
- involve assessing the impact of proposed activities on the landscape or the region (not just the impact on individual properties)
- consider economic and social factors, as well as environmental impacts.

These changes could work in conjunction with greater use of incentive- and market-based mechanisms (discussed below).

Risk-based

Risk-based approaches to regulation are designed to ensure that applicants' obligations are proportionate to the impacts of their proposed actions. This allows regulators to emphasise

education and voluntary compliance while still giving them the tools to take strong enforcement action when required. In the context of native vegetation and biodiversity conservation regulations, this means setting regulations that are sufficiently flexible to be applied on a case-by-case basis in ways that focus on environmental outcomes.

Some jurisdictions have adopted a risk-based approach to native vegetation clearing regulations. In Victoria, an application for a permit to remove native vegetation is categorised into either the low, moderate or high risk pathway, based on the extent and location of proposed clearing and the potential impact on the habitat of Victoria's rare or threatened species (VDEPI 2013). The risk to biodiversity of a proposal to remove native vegetation is assessed:

> … based on whether the removal could significantly impact on habitat for Victoria's rare or threatened species. This is determined by assessing the proportional impact of the proposed removal of native vegetation on rare or threatened species habitat. Proportional impact is a measure of the relative importance of the species' habitat to be removed in relation to the total remaining habitat for that species.(VDEPI 2013, p. 1)

Other jurisdictions are working towards a risk-based approach to native vegetation clearing regulations (DoE 2015b).

- Western Australia is improving its satellite data to 'enable more precisely targeted environmental regulatory activity to areas where maintenance of land condition requires this attention' (WA Government, sub. 54, p. 16).
- The recent review of biodiversity legislation in New South Wales recommended that a risk-based approach be taken to regulation, one 'that emphasises education and voluntary compliance while still giving regulators the tools to take strong enforcement action against those who do the wrong thing' (Byron et al. 2014, p. 8).

Well-designed risk-based approaches have a number of advantages, including that they:

- can improve environmental outcomes, by requiring a more comprehensive assessment proposals that could have more significant environmental effects
- can help to ensure that the costs and obligations faced by landholders are proportionate to the environmental effects of each proposed action. This is particularly important given the wide variation in the type and magnitude of actions covered by native vegetation and biodiversity conservation regulations.
- can allow all relevant risks to be considered, and for trade-offs between those risks to be made. Risks to native vegetation come not just from land clearing but also from poor land management (such as failure to control pests and weeds). As such, a system that focuses on limiting land clearing without giving sufficient regard to the ongoing task of environmental management will fail to achieve its conservation objectives. This concern applies to both private- and public-sector land managers (and indeed, participants told the Commission that public sector land managers often fail to adhere to good land management practices)

- can help to address perverse incentives (such as incentives to undertake pre-emptive clearing or *not* to plant native species), contributing to better outcomes for both farmers and the environment.

When adopting a risk-based approach, it is important that the risks are assessed in a *robust* fashion, and *clearly communicated* to stakeholders. Without clear communication, the complex risk assessment methodologies can be confusing and appear to contain anomalies (which could in turn lead to failure to protect areas of environmental significance, while imposing additional regulatory hurdles by 'protecting' areas of very limited importance). For example, in Victoria, the native vegetation location risk map has been misinterpreted as a map showing the importance of — rather than the risk that clearing would pose to — native vegetation (VDELWP 2016b).

It is also important that risk assessment methods apply equally to all landholders, with the same factors considered regardless of the purpose of the intended action. For example, it is not good practice to apply different rules to land clearing for the mining, petroleum, geothermal and exploration activities than would apply if the same clearing were proposed for agricultural purposes. Similarly, it is difficult to envisage an ongoing rationale for different rules to clearing on pastoral leases and freehold land, if the form of land tenure is the only difference between otherwise similar tracts of land.

A risk-based approach to native vegetation and biodiversity conservation regulations can also mean that regulations can more easily adapt to changing circumstances. This is important as:

> … a fundamental feature of ecosystems and species populations is that they are highly dynamic and change in unpredictable ways both with and without human intervention. Essentially, this means that biodiversity conservation is a 'moving target'. (Murtough, Aretino and Matysek 2002, pp. 14–15)

Risk-based approaches have been adopted in other related areas of regulation such as biosecurity, where newly modernised legislation provides a more flexible risk-based approach to compliance (chapter 7).

Landscape scale

Landscapes (or bioregions) are an effective scale at which to address threats to biodiversity and to consider the cumulative impacts of development proposals. At the landscape scale, geophysical patterns, the distribution of flora and fauna, and environmental processes that influence the functions of entire ecosystems can be considered in a way that is impossible at a smaller scale. There are approximately 130 bioregions across Australia.

> Planning for biodiversity at this scale recognises the significance of these natural processes and gives us the greatest opportunity to conserve biodiversity in sufficient numbers and distribution to maximise its chance of long-term survival. (NSW OEH 2011)

A landscape or bioregional approach can also allow for the heterogeneity between regions to be better taken into account in both regulatory and investment decisions, which is essential as 'landscape needs and appropriate management practices vary from region to region' (Byron et al. 2014, p. 23).

Inquiry participants generally supported a landscape approach.

> Environment regulations need to be landscape based and focus on activities with significant environmental effects. As an example, an approach to enhance the recovery of threatened species that focuses only on individuals rather than populations is too simplistic as it does not address the key issue of the health of the species at the landscape level (and across tenures). (Australian Forest Products Association, sub. 11, p. 8)

The Natural Resources Commission of NSW said:

> The goal for biodiversity conservation should be couched in the context of maintaining and improving landscape health and function across the whole landscape, including productive land … A landscape approach would deliver more biodiversity outcomes across a much larger proportion of the state than is possible within the reserve system, while also improving productivity and resilience. (NSW NRC 2014a, p. 3)

Since 1999, taking a landscape-scale approach to biodiversity conservation has been endorsed in successive Australian biodiversity strategies (DoE 2015b). However, native vegetation and biodiversity conservation regulations still typically require assessments of individual proposals, and so involve consideration of environmental outcomes at a smaller, local level. This can mean that cumulative impacts of proposals on the environment, and cumulative impacts of regulations on landholders, are not sufficiently addressed.

The effective implementation a landscape-scale approach would be assisted by data at the landscape or region scale. This point was stressed by the Western Australian Government, which noted that its 'Rangelands Condition Monitoring program will contribute much-needed information for Western Australia's arid and semi-arid lands' (sub. 54, p. 17). But regardless of data availability and quality, assessment at a landscape scale is desirable because species and ecosystems function at a landscape scale.

Consider economic, social and environmental factors

Once the environmental impacts of a proposed action have been assessed (using methods that are appropriate for the level of risk posed to the environment), it also important the economic and social benefits of the proposed action are taken into account. And in endorsing Australia's Native Vegetation Framework, COAG agreed that all governments would consider economic and social factors.

> Native vegetation management should adopt an integrated approach that considers both long-term and short-term environmental, economic and social considerations consistent with the principles of ecologically sustainable development. (COAG SCEW 2012, p. xiii)

However, in some jurisdictions the native vegetation and biodiversity conservation regulations that apply to farm businesses do not require, or in some cases even permit, economic and social factors to be considered alongside environmental ones. For example in New South Wales, Byron et al. found that:

> While the planning system [for urban and infrastructure development and extractive industries such as mining] considers social, economic and environmental factors to inform decisions, the native vegetation laws are based on a 'command and control' system that stifles innovation and forces landholders to absorb the costs of public goods delivered by biodiversity conservation on private land. (2014, p. 18)

In this case, it is essential to allow economic and social factors to be considered as part of assessment made under native vegetation and biodiversity conservation regulations, and for balanced judgements to be made. While economic and social factors are considered in other jurisdictions and circumstances, this may not always occur in a consistent manner (as evidenced by the perverse incentives and outcomes described in section 3.3). In part, failure to fully consider economic and social factors may stem from the difficulty of making trade-offs between competing objectives, and an absence of guidance on how decision makers should undertake the complex task of weighing those objectives.

In many cases, markets can provide a means of resolving uncertain trade-offs between competing objectives (see below). In other cases, community-based NRM organisations (box 3.12) can provide a forum for making these trade-offs at the regional or local level, particularly once regulatory frameworks enable risks to be considered at a relevant scale (see above).

DRAFT RECOMMENDATION 3.1

The Australian, state and territory governments, in consultation with natural resource management organisations, should ensure that native vegetation and biodiversity conservation regulations:

- are risk based (so that landholders' obligations are proportionate to the impacts of their proposed actions)
- rely on assessments at the landscape scale, not just at the individual property scale
- consistently consider and balance economic, social and environmental factors.

Box 3.12 Regional natural resource management organisations

There are 56 regional natural resource management (NRM) organisations across Australia, most of which are community based. While there is considerable variation in the role and function of these organisations in different states and territories, there are also some commonalities. In broad terms, most aim to 'strengthen the intrinsic motivation of community members to contribute voluntarily to NRM initiatives' (Curtis et al. 2014, p. 190). This translates into goals such as:

- keeping soils, agricultural landscapes, and ecosystems healthy
- preserving native vegetation and promoting revegetation
- safeguarding native animals
- managing groundwater and river catchments.

They do this by:

- determining regional NRM priorities and setting those priorities out in a plan or report
- receiving Landcare funding from the Australian Government
- allocating funding (from Landcare and other sources) towards the regional NRM priorities, often through grants to local landholders or community groups. For example, in the six months to 30 June 2014, the 14 regional NRM bodies in Queensland provided funding to 112 Landcare and community groups
- focusing on obtaining community input. For instance, Victoria's catchment management authorities are designed to maximise community involvement in decision-making
- employing a (generally small) number of paid staff, and making use of volunteers (either directly or through funded programs).

Regional bodies are seen as knowing more about the local area, and what is practical and achievable in that area, and thus are viewed by landholders as having greater legitimacy than other government agencies. However, the capacity of regional NRM bodies to engage stakeholders and build relationships based on trust has been limited by concerns about avoiding 'capture' by particular groups or individuals with strong agendas, and by governments' unwillingness to allow variation between regions.

> The tailored-to-context [community-based] NRM arrangements … are likely to make government administration of these arrangements more complex and costly in the first instance, but these costs need to be balanced against the benefits from increased voluntary cooperation. (Curtis et al. 2014, p. 191)

Adhering to the principle of subsidiarity would likely increase future effectiveness of NRM bodies.

Sources: Bartel (2014); Curtis et al. (2014); National Landcare Programme (2014); QDNRM (2014); VDELWP (2015a).

Making better use of market-based approaches

Markets provide a way to value environmental factors so that they can be considered alongside economic and social factors. Importantly, they involve increasing transparency about the cost–benefit trade-offs involved in providing desired environmental services, and

mitigate incentives for the community to demand greater levels of environmental protection simply because they are not paying for that protection.

Market mechanisms for protecting native vegetation and biodiversity can take many forms including private conservation efforts, markets for environmental offsets and paying landholders for conservation and environmental services. They have both advantages and disadvantages.

Advantages of market-based approaches

Compared with government regulation, market-based approaches to native vegetation and biodiversity conservation have several advantages.

- They give landholders positive incentives to retain and manage native vegetation. As the Department of Environment put it, 'farmers taking extra responsibility for environmental management deserve recognition of the costs involved, as well as their time and expertise in delivering sound frontline land care' (sub. 80, p. 13). Direct payments to those who know the land best gives them greater scope to deliver environmental outcomes in innovative and cost-effective ways.
- They enhance community welfare, because the conservation activity only occurs if the benefits to those paying for the conservation activity exceed the costs.
- To that extent that market-based approaches involve payments to landholders for public-good conservation, they facilitate increased scrutiny of costs and benefits of policy intervention. A requirement to fund conservation from within the budget would act as a discipline on governments' demands for conservation on private land.
- Market-based approaches can account for differences in the cost of conservation in different regions, or be targeted to better meet a particular conservation objective. Because environmental values, project feasibility, and project costs are not evenly distributed across the landscape, 'carefully targeted environmental investments can generate much greater environmental values than untargeted or poorly targeted investments' (Pannell and Roberts 2015, p. 5). In particular, by using auctions government can lower the cost of achieving the environmental objectives desired by the community. Through the auction process, landholders reveal information that would otherwise by costly for the government to obtain. The process for assessing bids can (and should) be designed to help decision makers to take into account any interdependence of the environmental benefits of different bids at the landscape scale.

Governments in Australia have endorsed market-based approaches.

> Although putting a price on the value of biodiversity and ecosystem services is difficult, well-designed markets are one of the most effective policy instruments for attributing economic value to biodiversity and can be very effective in encouraging investment in biodiversity conservation. (Natural Resource Management Ministerial Council 2010, p. 41)

New South Wales, Victoria (box 3.13) and Tasmania have trialled or operated market-based native vegetation conservation programs at various times (though there is limited publicly available information about the outcomes of these programs). International experiences suggest that the use of auction mechanisms can improve program efficiency, but that they 'still require further refinement to maximize environmental benefits and minimize transaction costs associated with such complex programs' (DUC 2009, p. 7).

Box 3.13 Tender-based ecomarkets in Victoria

The BushTender program was trialled in Victoria from 2001 (alongside a similar program called EcoTender). Both programs were designed to improve native vegetation management or secure revegetation on private land, with the aim of achieving improved environmental outcomes at both the local and catchment scale.

Both programs operated using a tender approach. Landholders submitted bids to improve the quality or extent of native vegetation on their land. The benefit offered by each tender was assessed according to a range of environmental outcomes, including terrestrial biodiversity, reduced saline land and riverine health (water quality and quantity). Carbon sequestration was also considered as part of the assessment of revegetation tenders.

Successful tenderers were paid to enter into an agreement with the Victorian Government to manage their land differently for a period of time (typically five to ten years). BushTender agreements covered over 35 000 hectares. Changes that landholders undertook to make included:

- fencing to address grazing impact by domestic stock
- adopting grazing practices to maximise habitat quality outcomes
- weed and pest animal control above current responsibilities
- retaining standing/fallen timber
- supplementary planting of existing patches of vegetation.

Sources: VDEPI (2014a); VDSE (2011).

Offsets (box 3.3 above) can also lead to the creation of offset markets.

Market-based approaches can be used to increase the involvement of the private and not-for-profit sectors in biodiversity conservation. There are already a range of privately managed conservation reserves — for example, Arid Recovery runs a 123km^2 fenced reserve in South Australia (Arid Recovery 2015) and Bush Heritage Australia owns and operates private reserves in every state.

Few inquiry participants expressed views on the benefits of market approaches (which may reflect that many landholders are not aware of, or do not have views on, market approaches). One exception was the NSW Farmers' Association, which advocated for payments to farmers who bear the burden of native vegetation law (sub. 72). More broadly, Race and Curtis found that:

> … despite its relatively recent application in NRM in the Australian context, the idea of paying for environmental services appears to be a generally well understood concept supported by landholders engaged in NRM programs. (2013, p. 1063)

Challenges of market-based approaches

While market-based approaches to native vegetation and biodiversity conservation have clear advantages, they also have limitations and can entail many challenges. First, the degree of scientific uncertainty associated with many aspects of native vegetation and biodiversity conservation makes market creation difficult. This can manifest in several ways.

- There may be a trade-off between market liquidity and scientific certainty. For example, due to the uncertain impact of offsetting land clearing in one area against land rehabilitation in another distant area, it is desirable to limit a native vegetation offset scheme to a particular landscape or bioregion. But limiting a scheme in this way reduces the number of potential buyers and sellers, adversely affecting the functioning of the market.
- The high probability of new scientific discoveries in the future make it likely that the property right traded in the market may need to be changed in the future. This means that markets for ecosystem services, like a range of other markets, are subject to considerable risk of policy change. This risk can diminish the value of the property right and hence the likelihood that market will operate effectively (Murtough, Aretino and Matysek 2002) Also, where there is a high degree of scientific uncertainty and property rights are locked in through a market-based system, there is a risk that a constituency of asset owners could resist policy change even if it might be in the community interest.

Second, landholder heterogeneity means that a given market-based approach is only likely to be effective for a subset of landholders. Race and Curtis noted that:

> … landholders with a farming background and lengthy experience as land managers may be seeking support with the cost of materials, rather than seeking land management expertise or additional labor. On the other hand, landholders who are nonfarmers with limited experience as land managers, and with high levels of off-farm income, may prefer one-to-one extension support rather than cash or materials. As a result, implementing an environmental program using fixed-grant incentives (i.e., single rate of payment for all participating landholders for initial capital works and ongoing management expenses, in exchange for environmental services) is likely to be a ‘‘blunt’’ approach, as it may ‘‘underinvest’’ in some landholders (i.e. be insufficient to sustain their commitment over the long-term) and ‘‘overinvest’’ in other landholders (i.e. exceed the level of support needed to ensure their long-term commitment). (2013, p. 1052)

Third, the transaction costs associated with government intervention can be substantial, and can limit participation in environmental markets (Harris-Adams, Townsend and Lawson 2012). There is also the risk that policies that provide payments for conservation

services reduce farmers' intrinsic interest in undertaking conservation programs (Farmar-Bowers and Lane 2009) and lead to short-term changes in behaviour that do not persist after programs cease.

It is also necessary to ensure that these market-based approaches interact successfully with policy approaches to carbon emissions. Land clearing contributes significantly to carbon emissions, and so native vegetation conservation can be considered as a form of carbon abatement. For example, some of the activities funded by the Emissions Reduction Fund include vegetation sequestration projects (Australian Government 2015a). As the Australian Forest Products Association noted:

> … agriculture and forestry, has the potential to make a major contribution to meeting Australia's carbon emission reduction targets. The first and second Emission Reduction Fund (ERF) auctions were dominated by land use projects, such as avoided vegetation clearing of agricultural land and new tree planting in degraded landscapes. (sub. 11, p. 4)

Native vegetation offsets also have their own challenges (box 3.14).

Box 3.14 Challenges with offsets

One of the key challenges for offset markets is that proposed losses of native vegetation are largely immediate and certain, but predicted gains from restoration efforts are uncertain, as the science of habitat restoration still developing and there are substantial limitations in the scientific knowledge of our ability to restore ecosystems.

Other common challenges with offsets include:

- *identifying net loss* — regulators must make judgments about how environmental impacts and gains are measured, and the duration of impacts and gains — the time lag between offsets implementation and outcome makes monitoring and verification of actual net loss difficult
- *fungibility* — ecosystems are not perfectly replaceable and regulators must decide how much dissimilarity between the primary and offsetting environments can be tolerated
- *additionality* — uncertainty about future activities makes it difficult to determine if the offset activity would have been undertaken anyway
- *accounting for risk* — information constraints regarding future events increase the risk of impermanence and reduce the certainty of environmental outcomes.

Source: PC (2013a).

Summing up

Despite the challenges involved in their design and implementation, market-based approaches to native vegetation and biodiversity conservation have some notable advantages. They provide a way of ensuring that the community bears the costs of providing the public-good native vegetation and biodiversity conservation services that it has sought. Not only would purchasing these services from landholders be more equitable

than some of the current regulatory approaches but, by encouraging and rewarding the efforts of landholders, it would be more efficient and effective in achieving environmental outcomes that the community desires.

DRAFT RECOMMENDATION 3.2

The Australian, state and territory governments should continue to develop market-based approaches to native vegetation and biodiversity conservation. Where the community is seeking particular environmental outcomes, governments could achieve them by buying environmental services (such as native vegetation retention and management) from existing landholders.

Administrative improvements

Even where efforts to reduce regulatory overlap and duplication are successful, there is also scope to improve governments' interactions and relationships with landholders and with each other (both within and between governments). This includes improving information flows, and building trust, especially with those affected by native vegetation and biodiversity conservation regulations.

Improving information flows

Good regulation is clear, simple, and practical for users. However, as many landholders have argued, native vegetation and biodiversity conservation regulations are so complex that understanding them is neither simple nor practical.

There is clear role for farming organisations to provide information and assistance about native vegetation and biodiversity conservation regulations to their members, in the same way they do for workplace health and safety, employment and other complex laws. As discussed earlier, many organisations already provide detailed information to their members (for example, QFF 2012; WA Farmers 2014). Farming organisations also provide a channel of communication from their members to governments.

Governments have made some efforts to produce user-friendly information and tools, such as websites, fact sheets and plain English guides to native vegetation and biodiversity conservation legislation (though, as explained below, if governments rely solely on these types of communication mechanisms, they deprive themselves of the knowledge that could be gained from more participatory approaches).

Despite the efforts of industry and government, farm businesses' awareness and understanding of the requirements of native vegetation and biodiversity conservation regulations is incomplete at best. Providing information to citizens affected by regulation is a core part of the regulatory task. Unless those affected by a regulation are aware of the

actions they must or must not take as a result of that regulation, the objective of the regulation is unlikely to be achieved.

First, governments need to ensure that they provide, or continue to provide, clear guidance on their native vegetation and biodiversity conservation regulations (including to their own staff). As interactive internet-based technologies become more widespread in all aspects of people's lives (notwithstanding concerns about internet access in rural areas — see chapter 6), there will be growing expectations for similar technology and convenience to assist in complying with complex regulations such as these. Technology has been used to good effect in related areas. For example, the Grains Research and Development Corporation has developed an app called *Weed ID: The Ute Guide*, which contains photos and information to assist growers in the identification of the most common weeds found in paddocks throughout Australia (GRDC nd). Similar products could be developed for native vegetation and biodiversity conservation regulations.

Targeted engagement programs may be needed for particular audiences, such as small-acreage landowners (Meadows, Emtage and Herbohn 2014). In addition, it is essential that all of the information that governments provide remains up to date, particularly given the many reviews and changes to native vegetation and biodiversity conservation regulations that are currently underway (box 3.4).

Second, each government needs to acknowledge that its regulations interact with those imposed by other levels of government, and provide basic assistance to landholders about other governments' requirements. As the Pastoralists and Graziers Association of Westerns Australia put it:

> If efficiency and effectiveness of regulation is ever to be achieved, government departments need to talk to each other. (sub. 70, p. 3)

From a landholder's perspective, it is unhelpful to be told that a certain action (say, clearing dead trees) is permitted under state regulations, without also being told that Australian Government approval may also be required to clear those trees (because in certain areas dead trees provide important habitat for species that are listed as threatened under the EPBC Act). Simply mentioning the existence of regulations imposed by other levels of government and providing a link to other governments' websites (and to other tools, such as apps, once they have been developed) would be a considerable improvement.

Building capability and trust

Building and maintaining trust is essential not only in maintaining a balanced and robust system of native vegetation and biodiversity conservation regulation, but also in reforming that system. However, inquiry participants noted an absence of trust between landholders and regulators (box 3.6 above).

Concerns about trust were compounded by participants' concerns about the poor management practices displayed by some government land managers (particularly in

relation to weed control). Another contributing factor is the steady decline in the delivery of natural resource managements extension services by government agencies over the past decade (Meadows, Emtage and Herbohn 2014).

To be effective, efforts to build and maintain trust must take into account the capabilities of landholders and environmental regulators, and the relationship between them. As the Commission has previously emphasised, 'policies that fail to engage the cooperation of landholders will themselves ultimately fail' (PC 2004a, p. 238). Indeed, if landholders choose not to adhere to the regulations, this could increase the risks to native biodiversity that the regulatory system is designed to protect (Mallawaarachchi and Szakiel 2007). Similarly, landholders want a trusted and long-term relationship with governments' environmental and natural resource management staff, and the absence of such a relationship may undermine the effectiveness of markets for environmental services (Race and Curtis 2013). A range of alternative governance mechanisms have evolved as a means of addressing these concerns (box 3.15).

Box 3.15 **Adaptive and collaborative governance**

Governance describes the way in which institutions, structures of authority and other bodies are used to establish policies and rules, to allocate resources for implementation, and to coordinate and control the resulting activities (PC 2012a). Governance systems are adaptive when they:

> … [facilitate] continual renegotiation of trade-offs between competing resource use interests to establish policy goals. Communities are engaged wherever possible to ensure shared ownership and responsibility for uncertainty with governments … the integration of scientific and local knowledge facilitates participatory engagement between governments and communities in an evolutionary process of policy design and implementation. (Nelson, Howden and Stafford Smith 2008, pp. 591–2)

Adaptive governance can be a useful approach, because it recognises that much of the uncertainty and complexity in natural resource management (including native vegetation and biodiversity conservation regulation) arises from the need to make balanced trade-offs between multiple, diffuse and changing interests. Adaptive governance is ideal where there are inherent gaps and uncertainties in knowledge, and trade-offs must be made based on judgments about community interests rather than on solely on scientific factors.

Similarly, collaborative governance brings stakeholders together in common forums with public agencies (at one or multiple levels of government) to engage in consensus-oriented decision making. In reviewing the literature on collaborative governance, Ansell and Gash found that:

> A number of the studies reviewed here have pointed toward the value of collaborative strategies: bitter adversaries have sometimes learned to engage in productive discussions; public managers have developed more fruitful relationships with stakeholders; and sophisticated forms of collective learning and problem solving have been developed. Other studies, however, point to the problems that collaborative strategies encounter as they pursue these valued outcomes: powerful stakeholders manipulate the process; public agencies lack real commitment to collaboration; and distrust becomes a barrier to good faith negotiation. (2008, p. 561)

Ansell and Gash (2008) point out that while collaborative governance takes time and cannot be rushed, it can save considerable time and effort later on, when it comes to implementation. Thus, working collaboratively and building trust can be useful in situations where a difficult implementation process is expected.

A relationship of trust and cooperation between landholders and regulators can only be achieved when regulators have sufficient understanding of farm business practices, and are capable of supporting farm businesses to make sound decisions about the effect of environmental regulations on their operations.

Investment in targeted extension services to address these issues could reduce the cost of producing environmental benefits on agricultural land (Harris-Adams, Townsend and Lawson 2012). This will be particularly important given reductions in state and territory government funding for extension. In this context, the Commission has previously noted that where rural activities have adverse environmental impacts that cannot be readily attributed to individual producers, it could be in the community's interests to contribute to the cost of farm-level extension services aimed at facilitating practice change (PC 2011e).

Building trust and enhancing cooperation between landholders and regulators will also require landholders' concerns about the inappropriate enforcement of environmental policies (box 3.6) to be addressed. That is, regulators need to ensure that their enforcement practices are timely, accurate, reliable and designed to minimise burdens on business and the community (PC 2015e). An example of the types of improvements that are possible was provided by the cotton farmer from Goondiwindi who participated in the Commission's case studies (appendix C). He has been able to work with regulators to swap the conservation of land with low conservation but high production value, for land with high conservation and low production value. This exchange leads to increases in both conservation and productivity.

More resourcing may be required

A further challenge for environmental protection capability is that there are limited resources to devote to native vegetation and biodiversity conservation, given the large numbers of species and vast areas that are considered to merit protection. An OECD report found that:

> … overall, the scale of environmental challenges facing Australian agriculture is much larger than can be addressed with existing budgets.(Pannell and Roberts 2015, p. 24)

Increased expenditure on extension services may be required:

> Managing native vegetation for production and conservation benefits can be challenging and requires specific skills, tools and knowledge … While farmers have multiple sources of information, localised or regionally specific information to support native vegetation management can be lacking. This can mean farmers are unsure of what species are on their land, their production value and the management actions needed for them. (Harris-Adams, Townsend and Lawson 2012, p. 19)

However, as noted above, making use of market-based approaches to native vegetation and biodiversity conservation (draft recommendation 3.2) will facilitate increased scrutiny of costs and benefits of policy intervention. This could help to increase the rigour with which conservation proposals are assessed, thereby freeing resources to devote to other

conservation objectives. Alternatively, a clearer statement of the costs and benefits of native vegetation and biodiversity conservation regulations could strengthen the case for devoting additional resources to this area.

DRAFT RECOMMENDATION 3.3

The Australian, state and territory governments should review the way they engage with landholders about environmental regulations, and make necessary changes so that landholders are supported to understand the environmental regulations that affect them, and the actions required under those regulations. This would be facilitated by:

- recognising and recruiting the efforts and expertise of landholders and community-based natural resource management organisations
- building the capability of, and landholders' trust in, environmental regulators.

Reducing the burden of other environmental protection regulations

Many environmental regulations set standards that apply across all sectors of economic activity. In some cases, this can mean that the particular effects of a regulation on farm businesses are not fully recognised before the regulation is adopted. The Australian Sugar Milling Council claimed that this 'very narrow perspective' and 'lack of rigorous assessment can lead to perverse outcomes and the negative economic and social impacts can be disproportionate to the improved environmental outcome that is being sought (sub. 68, pp. 2–3).

Many of the burdens imposed by other environmental protection regulations have arisen because those regulations do sufficiently take account of the different circumstances faced by businesses in particular industries or locations. Rigid application of standards (especially standards that are necessary and efficient in more densely populated areas, but that are neither of those things on an isolated farm) can impose a significant and unnecessary burden on farm businesses, without contributing to better outcomes for the environment.

To avoid this, regulations need to be designed with sufficient flexibility so that they only apply where environmental values cannot be preserved and protected in other ways, and where the benefits of protection outweigh the costs. The Australian Sugar Milling Council highlighted how good regulatory processes can assist in this regard. In 2009:

> … extensive regulations impacting commercial sugarcane farming and cattle grazing were introduced by the Government of the day without any form of regulatory impact assessment. It resulted in 'best guess' regulations that did not consider the vastly different growing conditions of the different sugar industry regions in Queensland. (sub. 68, p. 3)

The regulatory impact analysis processes outlined in chapter 14 are an important mechanism for ensuring that this occurs.

In relation to weed and pest control regulations, the Commission considers that much of the avoidable burden of those regulations arises when they are poorly enforced or when public land mangers (local councils, state governments and other government agencies such as water companies) lack the capacity to properly control weeds across all of their land holdings. There is some evidence to suggest that government capacity is the main cause of this issue.

> The capacity of public authorities to meet their weed management obligations varies considerably. Most retain a limited weed management capacity 'in house' and rely on the procurement of vegetation management services from contractors, who may not have the required skills for effective weed management. (NSW NRC 2014b, p. 93)

As such, the considerations relating to regulator capacity discussed above in relation to native vegetation and biodiversity conservation regulations are also relevant for weed and pest control regulations.

4 On-farm regulation of water

Key points

- The agriculture sector accounts for approximately two-thirds of Australia's total water consumption.
- Australia has a complex regulatory system for water that involves all levels of government, industry and the community. This inquiry has focused on regulations that affect the access, use and disposal of water by farm businesses.
- Water regulation at the farm scale has focused on creating markets in regions — where this is viable — to allow surface water to be traded to its highest value uses.
- Farmers report that water trading has increased the productivity of their businesses by providing them with the flexibility to buy and sell water in response to changing market and seasonal conditions.
- Regulation of groundwater and floodplain harvesting will substantially improve the security of water entitlements.
- Exit fees and other water charges are a significant barrier to water trading. Technology could be better used to allow real-time trading of water rights.
- There is no evidence of systematic misconduct or market failure that would justify the administrative and transaction costs of regulating the water broking industry.
- Lengthy delays in the design and implementation of water-related regulations cause uncertainty and undermine farm businesses' confidence to innovate and invest. More consultation and community participation is needed to reduce uncertainty and integrate local knowledge into the design and implementation of regulation.
- There are significant opportunities to streamline the water-related reporting commitments of farm businesses. A worthwhile first step would be to adopt the reforms suggested by the Interagency Working Group on Commonwealth Water Information Provision.
- The Commission has taken over some of the responsibilities of the National Water Commission, and will revisit many of the issues raised in this chapter in its future water-related inquiries.

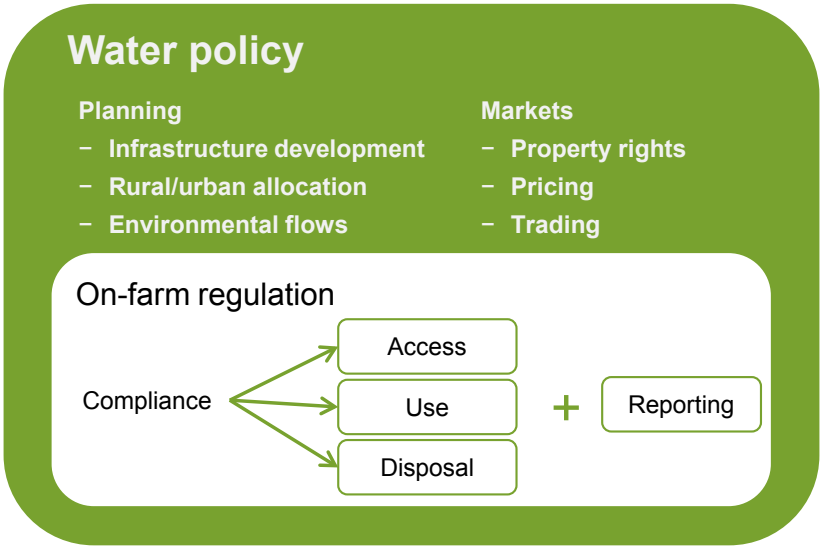
4.1 Water and agriculture

Water is an essential input for farm businesses. It is used to irrigate crops, to provide livestock with drinking water, and to manage waste in intensive livestock and processing industries. Access to water is therefore critical to improving the competitiveness and productivity of farm businesses.

This chapter looks at water use in the agricultural sector and the reasons why governments regulate water (section 4.1). It then looks in more detail at water use regulations that affect access (section 4.2), use (section 4.3) and disposal of water (section 4.4) by farm businesses. It also addresses the on-farm reporting requirements of water regulation (section 4.5).

The chapter does not look at the multiple and complex regulatory frameworks associated with water planning (figure 4.1). The Commission will look into water policy reform as part of the water-related functions it acquired following the abolition of the National Water Commission (NWC) in 2015 (box 4.1).

Figure 4.1 **Aspects of water policy in scope in this inquiry**



Water sources and regulation

The water used on Australian farms comes from waterways, underground aquifers and from overland flows during times of flood. Regulations generally specify:

- the amount of water that can be taken from these sources
- the methods and infrastructure that can be used to access water, and the conditions under which it can be accessed
- what water can be used for (in some cases).

Water and 'effluent' returned to the environment from farms is also subject to a range of environmental and health regulations.

Box 4.1 Productivity Commission water functions

The Productivity Commission has recently taken over the review functions of the National Water Commission (NWC).

The *National Water Commission (Abolition) Act 2015* (Cwlth) sets out a requirement for the Minister administering the *Productivity Commission Act 1998* (Cwlth) (the Treasurer) to refer two inquiries to the Commission — one on the National Water Initiative (NWI), the other on the Murray–Darling Basin Plan and associated water resource plans. The Minister must appoint an Associate Commissioner with extensive skills and experience in water resource management.

Inquiry into the National Water Initiative

The Minister must refer an inquiry to the Commission into progress towards achieving the objectives and outcomes of the NWI. The objectives of the NWI include the establishment of 'a nationally compatible, market, regulatory and planning based system of managing surface and groundwater resources for rural and urban use that optimises economic, social and environmental outcomes' (COAG 2004, p. 3).

The Commission will be required to make recommendations on actions that the parties to the NWI might take to better achieve the objectives and outcomes of the NWI. This inquiry will replace the NWC's former triennial assessment of progress toward achieving the NWI objectives. The first inquiry report must be submitted by 31 December 2017, with subsequent reports every 3 years.

Inquiry into the Murray–Darling Basin Plan and water resource plans

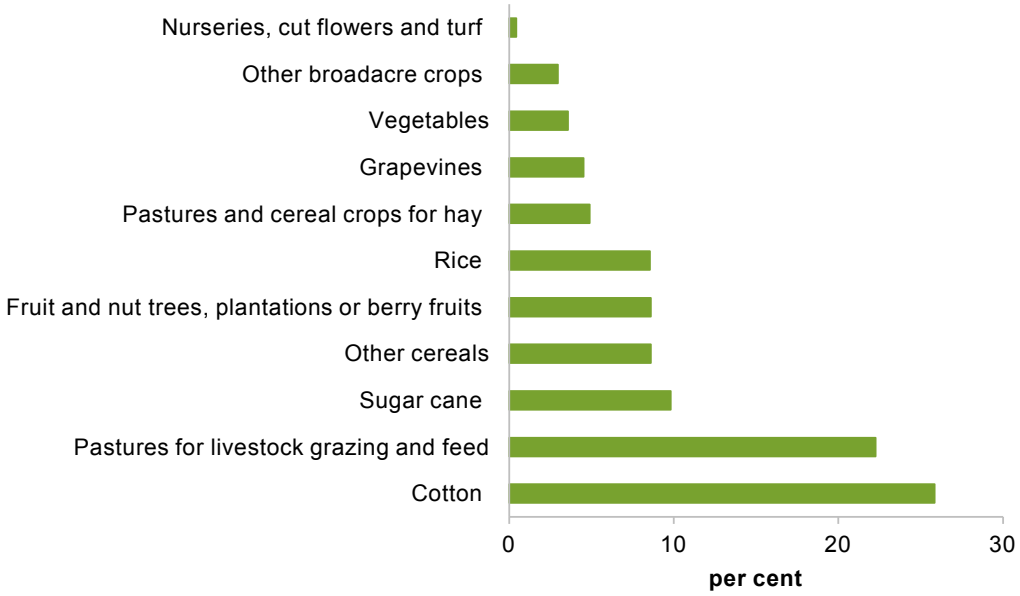
The Minister must refer to the Commission an inquiry into the implementation of the Murray-Darling Basin Plan and associated water resource plans. This inquiry replaces the NWC's five-yearly audit of the Murray–Darling Basin Plan. The first report must be submitted by 31 December 2018, with subsequent reports every 5 years.

Some facts about agriculture and water use

About two-thirds of Australia's total water consumption is used in agriculture. In 2013-14, approximately 115 000 farms used 11.6 million megalitres of water for agricultural production (ABS 2015j) from a total consumption in that year of 18.6 million megalitres (ABS 2015i). Farms in New South Wales used the most water (4.5 million megalitres) followed by Queensland (3 million megalitres) and Victoria (2.7 million megalitres).

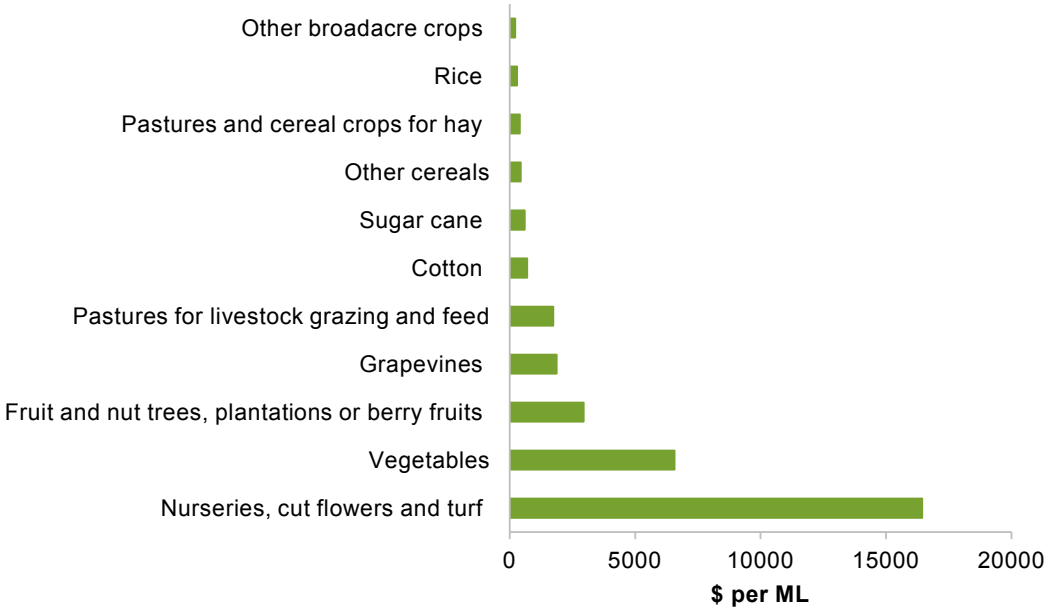
About 75 per cent of the water used in agriculture in 2013-14 was used for cotton, livestock (mostly dairy), sugarcane, rice and other cereals (figure 4.2). This group of commodities accounted for 51 per cent of the gross value of irrigated production (figure 4.3).

Figure 4.2 **Share of water use by agricultural commodity**
2013-14



Data source: ABS (2015j).

Figure 4.3 **Water use value of production[a] per megalitre[b]**
2013-14



a $ = Gross value of irrigated value of agricultural production. **b** ML = megalitre

Data sources: ABS (2015d, 2015j).

In 2013-14, 2.1 million megalitres of groundwater was used by nearly 47 000 farm businesses and made up over 18 per cent of total agricultural water use across Australia (ABS 2015j). Groundwater is derived from surface water that infiltrates soils and is stored below the earth's surface in porous sand or gravel layers. About 60 per cent of Australia's agricultural groundwater in 2013-14 was used in New South Wales and Queensland, with 14 per cent used in the Namoi and Murrumbidgee catchments (mainly for cotton production) and 12 per cent in the Burdekin catchment (used mainly for sugarcane production).

Groundwater use tends to be higher in dry years, as farmers substitute groundwater for surface water (PC 2010b). The use of groundwater in Australia has consistently exceeded 2 million megalitres per year in recent years (ABS 2015j, 2016h). CSIRO (2008) found that existing extraction rates were likely to be unsustainable in some catchments (seven of the twenty high-use groundwater areas in the Murray–Darling Basin). The pressure on groundwater resources was reinforced by NT Farmers:

> … water in the NT is mainly groundwater, with very minimal above ground water storage. As such it is critical for planning and allocation of extraction licenses be done in a manner that is fair to existing irrigators, well assessed in terms of new applications and taking a balanced view over competing needs. (sub. 8, p. 2)

Australia's climate is highly variable resulting in unreliable water allocations that add to the risks of agricultural production. Climate change is also predicted to affect the distribution of rainfall and reduce the availability of water (CSIRO 2008).

Why governments are involved

In the absence of regulation, water can become a 'common property' resource, for which inefficiencies arise if individuals have unrestricted access at little or no cost. This feature of water means that markets do not always function effectively and that water use in the private interests of some users can have significant adverse consequences for other users and the environment. Governments intervene to improve the allocation of this scarce and valuable resource and to improve the sustainability of its use (PC 2003).

Governments intervene in water management in various ways, including by:

- defining property rights — efficient water markets require clear and enforceable property rights to water
- overcoming information asymmetries — a lack of information about prices and how to exchange water rights can result in inefficient levels of trade
- resolving externalities — the use of water for one purpose can have adverse impacts on other users and the environment.

Water policy in Australia has focused on moving from an administrative to a market-based allocation of water (Connell 2007).

Governments use regulations to develop water markets by establishing property rights over water, and creating trading mechanisms. Water markets create an incentive for farm businesses to allocate water to its highest value uses, and to use it efficiently. Governments also invest in water infrastructure, regulate water prices and ensure that the environmental goals of water management are met.

Australia has a multifaceted regulatory system for water that involves all levels of government, industry and the community. The complexity of the institutional arrangements for managing water in Australia is partly due to Australia's federal system of government and the evolution of different regulatory approaches across states and territories (box 4.2).

Box 4.2 Water management in Australia's federation

There are four levels of water management in Australia — national, state and territory, regional and local.

The primary role of the Australian Government is national leadership and coordination of water issues that cross state boundaries, the most iconic example being the Murray–Darling Basin. Australian Government agencies involved in water management include the Department of Agriculture and Water Resources, the Department of the Environment, the Australian Competition and Consumer Commission, the Bureau of Meteorology, the Murray–Darling Basin Authority and the Productivity Commission.

The *Water Act 2007* (Cwlth) provides the main legislative vehicle for the Australian Government's role in the collaborative management of water resources in the Murray–Darling Basin. While the Australian Government is responsible for basin-wide planning and management, New South Wales, Victoria, Queensland, South Australia and the ACT are responsible for managing water, water infrastructure and environmental sustainability within their jurisdictions (Commonwealth of Australia 2014). Water resources vary significantly across Australia, and each state and territory adopts a different approach to water management. This means that regulation can vary markedly between jurisdictions.

Each state and territory has agencies, water authorities and water utilities involved in water management. Local governments are involved in aspects of water management such drainage, water use in public spaces, and water conservation. In Victoria, for example, the management of water is a shared responsibility between the Victorian Government, rural water supply authorities, catchment management authorities, local governments and land owners (VDEDJTR 2015b).

A sector under review

There have been numerous reviews of Australia's water sector over the past few decades[3], and several reviews are ongoing. Few areas of government policy have experienced such significant change over such an extended period of time.

3 See Connell (2007) for a review of the history of water policy in Australia.

Recent or ongoing reviews of water arrangements include:

- a 2011 inquiry by the House of Representatives Standing Committee on Regional Australia into the impact of the Murray–Darling Basin Plan in regional Australia (HoRSCRA 2011)
- a 2014 review of the *Water Act 2007* (Cwlth) (the Water Act) (Commonwealth of Australia 2014), undertaken by an independent panel seeking opportunities to reduce the regulatory burden generated by the Water Act
- numerous assessments conducted by the NWC (NWC 2014b).

Some recent reforms at the state level include:

- changes to water governance in Victoria to provide a more uniform operational framework for all state-owned water businesses (VDEPI 2014b)
- an enhanced dam approval process in Tasmania and a new policy on managing water resources during extreme dry conditions (DPIPWE, sub. 62)
- forthcoming changes in Queensland made by the *Water Reform and Other Legislation Amendment Act 2014* (Qld)
- new and updated water plans in many regions.

The Commission has undertaken a number of research reports including *Rural Water Use and the Environment: The role of market mechanisms* (2006b), and *Market Mechanisms for recovering water in the Murray–Darling Basin* (2010b). More targeted reviews include Commission reports on *Water Rights Arrangements in Australia and Overseas* (2003); and *Australia's Urban Water Sector* (2011a). The Australian Competition and Consumer Commission (ACCC) also recently undertook a *Review of the Water Charge Rules* (ACCC 2016d).

4.2 Regulating farm access to water

Regulation of surface water

From the perspective of farm businesses, an important focus of water regulation is the development of water markets. Water markets are created by regulations that establish property rights and set conditions on trade. Beyond this, regulation of surface water includes rules governing the charges that irrigation infrastructure operators can levy water users for capturing, storing and delivering water. Conditions on water trading are regulated by the ACCC and state counterpart agencies.

Water trading is most developed in the Murray–Darling Basin. The Basin Plan sets long-term average sustainable diversion limits (SDLs) that reflect an environmentally sustainable level of water use (or 'take'). The SDLs act like a 'cap' on water use and the amount of water that can be used for consumptive purposes in the Basin is regulated. The

Murray–Darling Basin Authority (MDBA) has determined that the Basin-wide long term average SDL for surface water is 10 873 gigalitres per year, which is 2750 gigalitres per year below the 2009 baseline level (MDBA 2016b). While significant progress has been made, the MDBA reported in early 2016 that nearly 800 gigalitres are still to be redirected from existing uses to meet this goal (MDBA 2016a).

Water markets are also being developed in other regions of Australia, including Western Australia, as the volume of water entitlements in other catchments approach allocation limits (WADW 2010).

In other regions of Australia, water resources are not yet considered to be fully allocated. The motivation for regulation in these regions is the need to develop these resources sustainably and establish market mechanisms that will enable ongoing reallocation of water to its highest value uses. For example:

- in Tasmania 10 small catchment irrigation schemes have been developed over the past decade and a further five schemes are under development (Tasmanian Irrigation 2015)
- the Australian Government has established the National Water Infrastructure Development Fund to develop water resources mainly in northern Australia, particularly in the Fitzroy and Mitchell catchments (DAWR 2015s).

Without water trading, farm businesses may not be able to expand their operations or take advantage of innovations. For example, the West Australian Pork Producers Association said:

> A situation exists where landowners have licences for large volumes of water that they are not using, have never used and have no commercial business plan to use. This prevents producers with a genuine need and a sound business, from within the same area, expanding due to limited water availability. (sub. 24, p. 9)

Issues in regulating surface water

Trading within districts

The benefits to farm businesses of being able to buy and sell water are to some degree offset by the costs associated with complying with the regulations needed to establish and operate water markets.

Farmers interviewed by the Commission for this inquiry indicated that the ability to trade water has significantly boosted the productivity of their businesses by providing the flexibility to buy and sell water in response to changing market and seasonal conditions. They also said that while there was room for improvement, the process of trading water is gradually becoming faster and more efficient (box 4.3).

Box 4.3 A cotton farmer's perspective on water trading

The manager of a large cotton farming business west of Goondiwindi in southern Queensland was generally upbeat about the future of the cotton industry in Australia, and the contribution that water policy reforms have made to its sustainability. The manager told the Commission that 'water allocations have gone down over time, but this has increased the long-term sustainability of our industry'. Water trading has allowed him to expand the business, and to introduce a flexible management approach that has meant he can adapt to increasingly uncertain allocations of water.

However, the manager also noted that 'we can trade everything else almost instantly, but we can't yet do intra-flow trades'. He said that the duration of flood events in the area can be as brief as four to six hours, whereas completing a water trade takes three to five days.

While the manager was generally pleased with the commercial advantages that water trading has brought, he was also of the view that these advances can go further. He anticipates that technology-based refinements will eventually enable water trades to take place much more rapidly, adding further to the flexibility and productivity of his farm business. An issue he would like resolved with water trading is the multiple approvals required to trade water — currently he needs approval from the local water utility as well as the state government to buy water.

Source: Productivity Commission case study interview (appendix C).

A number of studies, including the Commission's report on *Rural Water Use and the Environment* (PC 2006b) have found that water markets are making a significant contribution to increasing rural water-use efficiency. These productivity gains are partly attributable to markets facilitating the transfer of water entitlements to larger and more efficient farms (Dr John Cooke sub. 29). A study by the NWC, for example, showed that between 2001 and 2006, the value of agricultural production in the southern Murray–Darling Basin increased by nearly 2 per cent despite a 14 per cent reduction in water use over the corresponding period (NWC 2010). Modelling for the study estimated that water trading in the southern Murray–Darling Basin increased Australia's gross domestic product by more than $220 million in 2008-09.

The NWC recently concluded that surface water trading in the Murray–Darling Basin is providing irrigators with increased flexibility:

> The removal of many unnecessary barriers to trade, the facilitation of interstate trade and the implementation of better service standards have streamlined water trading, which has become a vital tool for giving irrigators the flexibility to respond to variable water availability and market factors. (NWC 2014a, p. 6)

However, other evidence suggests that the implementation of the National Water Initiative (NWI) has been slow, hindering improvements in on-farm productivity. A recent independent review of the Water Act 2007, for example, found that some of the reforms established under the Act and the Murray–Darling Basin Plan were in transition and were yet to be fully implemented (Commonwealth of Australia 2014).

An important ongoing issue for farm businesses is the insecurity of water rights, especially outside of the Murray–Darling Basin. The independent review called for rapid and consistent national implementation of reforms to:

> … ensure water access entitlements established through transparent processes were respected and could not be arbitrarily eroded to any significant extent without compensation (Commonwealth of Australia 2014, p. 38)

The Commission has suggested that trade between irrigation districts could be enhanced by reducing unwarranted differences in the specification of water entitlements (PC 2006b). More recently the ACCC (2014b) said:

> States and territories should consider further 'unbundling' their water access rights into their component parts, with separate and clearly defined rights to storage, carryover and delivery. Where appropriate, these separate rights should be clearly defined and made tradeable, to enable a more efficient utilisation of water service infrastructure (p. 56).

The Commission's report on market mechanisms for recovering water in the Murray–Darling Basin identified a number of ways in which rural water trading could be improved (PC 2010b). These included removing volumetric caps on the trade in water entitlements out of irrigation districts, and removing the excessive termination fees charged by some infrastructure operators when farmers sell water rights out of a region (discussed further in the next section). The Commission also recommended improvements in market mechanisms to reduce the time taken to transform jointly held water entitlements into salable individual property rights, and speed up the regulatory approval and registration of trades (PC 2010b).

Removing barriers to the trade between urban and rural water users provides a significant opportunity to improve water trading (PC 2014f). Modelling by the Commission found that the impact of reduced water availability on households and industries was likely to be much lower when trade between rural and urban users was unconstrained (Dwyer et al. 2005).

Water trading has become more efficient as online systems for water trading have improved. The NWC found that there has been an improvement in the functionality of the 'registers' used to process water trading transactions:

> Victoria, New South Wales, Queensland and South Australia have online registers that have improved the efficiency of transactions and access to market information — with the Victorian Water Register currently the benchmark in this area. In other jurisdictions limited market information can be accessed online but it does not allow interrogation or processing of trades. There is still work to be done to improve public access to jurisdictional registers and to facilitate data searches within these registers. (NWC 2014a, p. 40)

One cotton farmer told the Commission that after a lengthy period of development, the online system for trading water in New South Wales is beginning to work efficiently, and that water is generally transferred promptly once it is purchased (appendix C).

Other participants to this inquiry also raised concerns about the design and implementation of water trading regulations. These include slow development of water property rights outside the Murray–Darling Basin, restrictive conditions placed on accessing water, and unnecessary restrictions on trade. According to the Pastoralists and Graziers Association of Western Australia:

> Licensing regimes in Western Australia do not follow the provisions of the National Water Initiative as no perpetual licenses have been issued in this state. This water allocation is a property right and the fact that there is no continuity of access affects the owner's ability to forward plan or borrow funds for expansion. (sub. 70, p. 6)

The Voice of Horticulture argued that current rules around the timing of water trading impose a burden on horticulture businesses:

> In Batlow water trading is difficult for apple growers at the top of the catchment as there are rules including flow rates that must be achieved before water can be harvested. However, this timing does not coincide with the times water is required on the orchard. Consequently on-farm water storage is required before a grower can buy more allocation. (sub. 42, p. 14)

Trade restrictions were also a concern for Australian Dairy Farmers:

> … while water entitlements are freely traded, other water products such as delivery shares, are tied to specific shared irrigation districts and are not freely tradeable in practice. This represents a competitive disadvantage imposed on one group of farmers through an additional cost burden. (sub. 63, p. 5)

The ongoing implementation of reforms under the NWI will further improve the ability of farmers to manage risks and boost farm output, competitiveness and productivity. The Commission is likely to examine regulatory impediments to water trading as part of its water-related responsibilities.

Concerns about trading between districts

The farm businesses and water utilities that the Commission spoke to in this inquiry suggested that while water can be traded efficiently within irrigation districts, water trading between districts remains problematic. This is in part due to catchment hydrology and the 'transmission' losses of water that occur when water is transferred long distances along natural water courses. However, it is also partly due to regulations that inhibit inter-district trade.

The states place a range of restrictions on water trade between regions (BoM 2015). While participants did not raise concerns about these restrictions, trade can be restricted when thresholds of water flow or other conditions are met (NSW Office of Water 2014). And, recently some concerns have been raised about the design and operation of these regulations. For example, the Ricegrowers' Association of Australia criticised the operation of NSW government regulations governing inter-valley trade between the Murray and Murrumbidgee rivers claiming that it led to 'a pretty haphazard race to secure

trades before the door closed, and the process lacked fairness' (Ricegrowers' Association of Australia 2015, p. 1).

> When water entitlements are sold to another district, the fixed costs of water infrastructure are spread across fewer remaining entitlements. Exit or 'termination' fees and restrictions on water trading between districts have been imposed by some infrastructure operators to cover the future costs of infrastructure and limit increases in water charges for remaining water users:
>
> The imposition of a termination fee on an irrigator that is terminating their right of access ensures a contribution from exiting irrigators for the ongoing fixed costs of operating the infrastructure. This provides a degree of revenue certainty for infrastructure operators. Revenue from termination fees can be used to limit future increases in charges for those customers who maintain their connection or to fund network rationalisation to lower ongoing costs. (ACCC 2015f, p. 31)

Termination fees are a barrier to water trading, and the Commission has previously recommended that they be removed (PC 2006b). Exit fees are distortionary — they increase the price of water entitlements in importing regions, while reducing the prices to sellers in exporting regions. This reduces the quantity of water traded, and forgoes the economic benefits of reallocating water to its highest value uses. It also risks locking water into low productivity businesses and regions.

The ACCC said:

> IIOs [Irrigation Infrastructure Operators] have an incentive to prevent the trade of water outside of their irrigation networks, primarily because this will reduce their revenue from variable charges. To prevent trade, IIOs can either withhold their consent for such trades (where they hold the statutory water access entitlement on behalf of their customers) or impose prohibitive termination fees. Such actions can effectively 'lock' water into a particular geographical area, preventing it from reaching higher value uses. (2014b, p. 55)

In 2014, an independent review of the Water Act revealed widespread concern about inconsistent approaches to setting water charges across the Murray–Darling Basin (Commonwealth of Australia 2014). Termination fees are one of three types of water charges. Governments also levy 'planning and management' charges to recover the costs associated with planning and managing the development of water infrastructure. Irrigation infrastructure operators levy 'infrastructure charges' to cover the cost of infrastructure for harvesting, storing and delivering water.

Different charges in different irrigation districts reflect differences in the costs of infrastructure, but inevitably raise equity issues between districts:

> … the use of a Basin-wide charge would be contrary to the user-pays and price transparency objectives of the [Water] Act and to the National Water Initiative pricing principles, and would result in cross-subsidisation and inefficient use of the infrastructure services and water. (Commonwealth of Australia 2014, p. 60)

Based on a survey of 270 irrigated farm businesses, Ashton reported that:

> Across the Murray–Darling Basin, an estimated 46 per cent of irrigators indicated the level of fixed charges was very important to their decision to undertake a permanent water trade, with a further 20 per cent indicating it was somewhat important … The highest responses for the importance of fixed charges in making permanent water trades were for the Goulburn–Broken and Murray region. (2015, p. 3)

Irrigation businesses, especially in New South Wales, raised concerns about the regulatory burden imposed by the different sets of water charge rules. According to the NSW Irrigators' Council, the three sets of water charges impose an unnecessary regulatory burden on irrigators and ongoing changes to the framework add to this burden:

> … the three sets of water charge rules mean a significant additional regulatory burden for irrigators and irrigation infrastructure operators (either indirectly, through the determination of bulk water charges in NSW, or directly, through additional reporting and compliance requirements) … The constant change in the regulatory framework governing the determination of bulk water charges in NSW is not only disruptive but also costly for irrigators, government agencies, bulk water suppliers and stakeholder representative bodies. (sub. 3, pp. 5–6)

The National Irrigators' Council added that:

> Significant costs are imposed on irrigation businesses complying with water charge rules, particularly the Water Charge (Infrastructure) Rules. (sub. 18, p. 6)

The National Farmers' Federation (NFF) stated that:

> Unlike state agencies and private water infrastructure operators, there is still little transparency or independent review of the MDBA's cost structure in this regard. (sub. 61, p. 16)

Submissions to the 2014 review of the Water Act also raised concerns about water charge rules. For example, Southern Riverina Irrigators (2014) were concerned about the complexity of water charging and the different water charging regimes across the Murray–Darling Basin.

Concern over potential inequities in water charges between districts led the Australian Government to commission an inquiry into water charge rules by the ACCC. The ACCC's (2015f) draft advice was to retain but streamline the application of all three types of water charges by applying them consistently regardless of the size and ownerships status of the water-using business, or the purposes for which water is used. Other amendments were designed to improve the transparency of pricing and strengthen regulations to prevent discriminatory pricing.

Both the independent review of the Water Act and the ACCC (2015f) noted a lack of submissions on exit fees from farm businesses and agricultural industries more generally. Both concluded that this may indicate that the current fee structure is operating efficiently. An alternative explanation put forward by the farmers interviewed for this inquiry is that a combination of hydrological transmission losses and exit fees are dissuading inter-district trade. This is consistent with the findings of the Commission's report on *Market*

Mechanisms for Recovering Water in the Murray–Darling Basin (2010b) that large transmission losses can hamper delivery from one site to another and preclude trade.

The Commission is likely to reconsider exit fees as part of its water-related responsibilities.

Calls to regulate water brokers

Water brokers investigate trading options for their clients and facilitate the buying and selling of temporary allocations and permanent entitlements (ACCC 2010). They also provide advisory services regarding water products and the functioning of water markets. Water brokers assist farm businesses by bringing together buyers and sellers, reducing search costs, improving information flows and helping with regulatory approvals.

The NFF explained the role that water brokers play in providing irrigation farm businesses with an up-to-date market information:

> The absence of a consolidated source of market information results in considerable inefficiency in the water market. Ultimately, most irrigation farmers largely rely on the advice of their water brokers rather than conduct their own analysis of the many different trading platforms operated by private companies, irrigation organisations or the often dated market information available on government websites. (sub. 61, p. 16)

The NWC also commented on the positive contribution that brokers are making to the efficient functioning of water markets:

> … private water brokers are filling a gap in market information, providing a combination of publicly available data, and disclosing limited price and market information. This is having a significant positive impact on the availability of information in the marketplace as at least 60 per cent of trades occur through private water brokers. (NWC 2014a, p. 24)

The potential for misconduct by water brokers to undermine confidence in water markets has led to calls to regulate the industry (ACCC 2010). Past calls for regulation appear to have been motivated by concerns that 'misconduct by intermediaries could impose financial losses on consumers and damage market confidence' (Allen Consulting Group 2007, p. 9).

Concerns about the conduct of water brokers tend to be directed at 'possible future misconduct — and the potential negative consequences that this entails for the individuals involved and for water markets more generally' (ACCC 2010, p. 1). The ACCC noted that concerns relating to misleading or deceptive conduct, theft, fraud and insolvency are already addressed through the fair trading provisions of the *Competition and Consumer Act 2010* (Cwlth)), the *Corporations Act 2001* (Cwlth) and general criminal law.

In its submission to this inquiry, the NFF revealed ongoing concern in the agricultural sector about the potential for water brokers to exercise market power over farm businesses:

> Regulatory reform to improve the transparency and availability of water market information would go some way to redress the information imbalance between water market participants. (NFF sub. 61, p. 16)

The South Australian Government and the Department of Agriculture and Water Resources indicated that a voluntary accreditation scheme was an appropriate option.

For example, the South Australian Government said it:

> … believes that a voluntary intermediary accreditation scheme would be the appropriate action rather than an industry-specific regulation. (sub. 57, p. 19).

The Department of Agriculture and Water Resources recommended:

> … an industry-led regulatory scheme that could include voluntary accreditation, a code of conduct and a defalcation fund. Consistent with the Government's regulatory reform agenda, the Government has accepted this recommendation, recognising that there have been very few reported cases of misconduct and no evidence of overall impacts on the water market that warrant regulatory intervention. (sub. 50, p. 6)

The regulatory impact statement prepared by the Department of Sustainability, Environment, Water, Population and Communities found that introducing a licensing scheme was likely to have a significant negative impact on the water broking industry:

> It is likely that the cost of establishing and maintaining a licensing scheme … exceed[s] the benefits associated with addressing stakeholder concerns and reducing risk of misconduct. If full cost recovery is pursued, the cost is likely to be prohibitive for the majority of intermediaries to continue operating. (DSEWPaC 2013, p. 36)

In 2014, the independent review of the Water Act recommended 'that the Australian Government work with industry to ensure that an appropriate and effective scheme of industry self-regulation is developed' (Commonwealth of Australia 2014, p. 54).

The Commission is likely to look at the regulation of water brokers as part of its water-related responsibilities. That said, there is no evidence of systematic misconduct or market failure in the water broking industry and no concerns were raised by participants to this inquiry about water brokers. Unsupported concerns about future 'potential' misconduct are an inappropriate basis for regulation, because these behaviours may never materialise. This points to the lack of a sound objective for regulating water brokers.

Environmental flows

Surface water used on farms often has important ecological functions in natural ecosystems. An important focus of regulation not easily resolved by water markets is the question of how much water should be allocated to the environment relative to commercial uses.

Some farm businesses and irrigators expressed concern about reduced access to water and higher water prices resulting from the 'diversion' of water for environmental purposes (Ronda and Allen Harmer, sub. 15). Australian Dairy Farmers also stated that:

> Government intervention to reduce the amount of water available through the Murray–Darling Basin Plan is putting upward pressure on water prices. More than 1160 [gigalitres] has already been transferred from the pool allocated for irrigation across to the environment under the Basin Plan, through buybacks and on-farm upgrades. The pool may shrink even further, if the Basin governments push ahead with a commitment to recover another 450 [gigalitres] in addition to the Basin Plan's 2750 [gigalitres] target. (sub. 63, p. 4)

In its annual report on the basin plan, the MDBA noted that it was investigating the impact of the Basin Plan on water prices and that:

> Evidence collected so far indicates the strongest relationship is between temporary water prices and allocations … Allocations, which are determined by state agencies, are made on the basis of several factors, including rainfall and storage levels. The behaviour of the temporary water market, across the water year, has changed as a result of changes to demand and supply, the widespread introduction of carryover, as well as the changing way state governments and irrigators manage risk. (2015, p. 18)

The implications of the Murray–Darling Basin Plan and associated water resource plans will be examined by the Commission as part of its water-related responsibilities. However, the Commission notes that the allocation of water to the environment is a potential source of uncertainty for farm businesses which can add to a cumulative sense of regulatory burden.

Frontiers of water regulation

As regulation of surface water matures, the attention of regulators is turning to regulating groundwater and the interception of overland flows. While the regulation of these alternative sources of water has potential to improve the security of water entitlements held by farm businesses, the Commission heard that lengthy delays in the design and implementation of these regulations is causing uncertainty and undermining the confidence of farm businesses to innovate and invest.

From the perspective of farm businesses, the regulation of groundwater and overland flows are important because of the hydrological connections between these alternative sources of water. Physical interconnection means that unmeasured or uncontrolled use of groundwater and overland flows can reduce the security of all water entitlements including those held for surface water. Unreliable water entitlements risk undermining confidence in water markets, and foregoing the productivity benefits of future trade that would allocate water to its highest value uses.

EDOs of Australia provided the following example:

> In Queensland, the *Water Reform and Other Legislation Amendment Act 2014* introduced an exemption allowing mining and coal resource projects to take unlimited groundwater needed to access their resource without obtaining a licence … Without the water licence framework to act as a check and balance prior to associated water being taken by the mine, the government cannot adequately manage a State's water resources. (sub. 60, p. 9)

Groundwater

The management of groundwater resources is covered by regulation spanning all levels of government. At a national level, groundwater is regulated under the NWI, the National Groundwater Action Plan, and the Murray–Darling Basin Plan. Water sharing arrangements are typically governed by state and territory legislation (Geoscience Australia nd). For example, the Victorian Government manages the allocation of surface water and groundwater in accordance with the *Water Act 1989* (Vic). A water entitlement and planning framework is in place to define how water is shared, held, used and traded. To use groundwater, farmers in Victoria generally need a bore construction licence and a groundwater usage licence (VDELWP 2015b).

Local governments and regional organisations such as community-based natural resource management (NRM) groups and catchment management authorities also play a role in groundwater management through, for example, planning mechanisms, building controls, infrastructure and drainage management, environmental rehabilitation and community education.

Trade in groundwater is limited by the uncertainties that surround the level of storage, connectivity with surface water and potential impacts on other users, including the environment (PC 2006b). For example, the Murray–Darling Basin Plan prohibits the trading of groundwater unless proponents can demonstrate that there is sufficient hydrological connectivity between the two locations, and that water access rights in the two locations are sufficiently similar (MDBA 2014). Proponents are also required to demonstrate that measures are in place to address third party impacts that result from trade. These conditions are costly for individual farm businesses to comply with, and likely to preclude trade in most instances (PC 2006b).

Precise scientific measurement of groundwater and hydrological connectivity is not necessary to achieve worthwhile productivity benefits from trade. The Commission's report on *Rural Water Use and the Environment* noted that while comprehensive solutions may be some time off, conservative separate groundwater and surface water caps could be adopted in the short term. Also, simple 'rules of thumb' can be used (such as capping extraction from all groundwater sources within some distance of connected rivers), with new information informing policy settings over time (PC 2006b, p. 36).

While some progress has been made in understanding catchment hydrology, and in the development of robust 'rules of thumb', progress towards including groundwater in water

markets has been slow. The Commission will consider the regulation of groundwater as part of its water-related responsibilities.

Overland flows

Official estimates suggest that in 2013-14, over 63 500 farms used over 1850 gigalitres of water from farm dams, or roughly 16 per cent of total agricultural water use (ABS 2015j). Nearly 90 per cent of this water use was reported from three states: Queensland (46 per cent), New South Wales (32 per cent) and Victoria (10 per cent). The development of irrigation schemes in Tasmania is reflected in that small state's disproportionate 6 per cent share of the national total.

Official estimates of the interception and use of water on farms are likely to be conservative, because this source of water is often not measured or reported. This includes myriad small dams capturing small amounts of water for stock and domestic use, but it also includes much larger amounts of water captured and used on irrigated farms. For example, cotton farms on Australia's ephemeral inland river systems rely on capturing, storing and irrigating with water that flows across the landscape in times of flood. As one cotton farmer told the Commission:

> We never used to admit that we did this, but now that they're talking about giving us a licence for it we had to start telling them. (Productivity Commission case study interview, appendix C)

As is the case with groundwater, the regulation of overland flows is important for protecting the integrity of water entitlements (PC 2006b). Regulating the interception of overland flows involves a balance between the rights of farm businesses to water that falls as rainfall or flows across their land in times of flood, and the availability of water to users and ecosystems further downstream (PC 2010b). Water intercepted on farms may be reduced in quality before it is returned to groundwater or streams, imposing additional costs on downstream users and the environment. For this reason, all of Australia's states and territories regulate the interception, storage and use of water on farms.

In its submission to this inquiry, EDOs of Australia stated that:

> Given the significance to farming communities of maintaining water supplies and water quality, EDOA recommends that all allocation and dam construction decisions be required to demonstrate that adequate environmental flows will be retained, and that these decisions be open to challenge by interested third parties. (sub. 60, p. 9)

EDOs of Australia also pointed out that exemptions for small off-stream dams including recent changes to legislation in Tasmania are 'an example of regulatory amendments that have improved efficiency while maintaining (potentially, improving) environmental outcomes in respect of small farm dams' (sub. 60, p. 9).

Interception of overland flows is regulated by water-related legislation in each state and territory. In New South Wales, section 54 of the *Water Management Act 2000* (NSW)

specifies the maximum dam capacity that can be used to harvest water on farms, and the percentage of runoff that can be intercepted. The maximum allowable dam capacity varies by region with the amount and seasonal distribution of rainfall. The percentage of runoff that can be intercepted ranges from 10 per cent in the central and eastern regions of the state, to 100 per cent in the west (NSW DPIW nd).

In Victoria, farm businesses need a 'licence to take and use' water for dams built for irrigation or commercial purposes, but not for dams used for domestic use or watering livestock (VDSE 2007). A construction licence is also required, which ensures that dams meet acceptable engineering standards. Licences for farm dams across Australia often place conditions on the operation of dams such as allowing water to flow at certain times of year (WADW 2014).

Voice of Horticulture stated that:

> Governments also need to speed up approval processes to enable growers to build new on-farm dam storage and to purchase more water allocation to replenish their dams. This is a particular problem in NSW. (sub. 42, p. 14)

The regulation of water captured from overland flows is a significant issue on the large inland river systems in the northern part of the Murray–Darling Basin. The regulation of 'floodplain harvesting' (New South Wales) or 'overland flows' (Queensland) controls the construction and management of channels and dams used to divert floodwaters flowing across the landscape. This infrastructure is typically much larger, and captures much greater volumes of water, than small farm dams used for domestic and livestock purposes. It consequently also has greater implications for downstream users and the environment.

In Queensland, the 'taking' of water from overland flows is administered by the Department of Natural Resources and Mines under the *Water Act 2000* (Qld). Rules in the Water Regulation 2002 and the *Sustainable Planning Act 2009* (Qld) control the construction of new infrastructure to capture overland flows (Queensland Government 2015a). Farmers in Queensland who participated in the Commission's case study interviews (appendix C) did not feel any undue uncertainty regarding existing infrastructure under these regulations, but commented that it was taking years for new infrastructure to be approved.

In New South Wales, the Department of Primary Industries is in the process of implementing a 'floodplain harvesting policy' that was published in 2013. The purpose of the policy is 'to manage floodplain water extractions more effectively in order to protect the environment and the reliability of water supply for downstream water users, ensure compliance with the requirements of the Water Management Act 2000 and meet the objectives of the National Water Initiative' (NSW DPI 2013a, p. 2)

Farmers in New South Wales who the Commission spoke to for this inquiry welcomed the potential improvement in the security of water entitlements that regulating overland flows was likely to bring them (appendix C). However, lengthy delays in the design and

implementation of these regulations are causing uncertainty and undermining their confidence to invest (box 4.4).

Box 4.4 A farmer's perspective on the uncertainty of changing water regulations

A cotton farm near Moree has nearly 250 hectares of dams, and a network of irrigation channels and fields for capturing, storing and using water. The irrigation infrastructure is an investment to optimise its capacity for an uncertain summer rainfall. It was originally designed for an era of higher and more secure water allocations.

The farmer has been closely involved in local water policy for 40 years. His overwhelming concern is the constant changes to water regulation, reductions in water allocations, and the uncertainty these create for investment and the ongoing viability of the farm.

The farmer recognises that the introduction of water trading has been positive for the cotton industry — it has increased productivity by giving farmers the flexibility to buy and sell water in response to changing market and seasonal conditions. According to the farmer, after a lengthy period of development, online systems for water trading are beginning to work efficiently, and water that is purchased is generally transferred promptly.

However, changes to water policy have dramatically increased the exposure of his farm to seasonal climate risk. The most reliable source of water is groundwater, the allocation of which has been reduced by 42 per cent since the introduction of national water reforms. This has meant that the area of irrigated cotton that can be reliably grown each year has fallen from 300 to 180 hectares, and in turn reduced the most reliable source of income for this farm business.

According to the farmer, an ongoing concern is uncertainty over water allocations from floodplain harvesting. He is looking forward to the certainty that licensing this water will bring, but concerned that the design of these regulations continues after a 10 year process. He said:

> The farmer is the only constant. Over the last 10 years we've had five water Ministers and three name changes to the Department, and each one led changes and delays.

Also, the ongoing uncertainty associated with water allocations is affecting his capacity to borrow and invest. The farmer said when he says to the bank 'it's ok, we're going to get a licence for harvesting overland flows', the answer is 'when?'. The farmer said he hasn't been able to answer them for a long time. The farmer claims that the ongoing uncertainty is affecting land values — the value of non-irrigated farmland in the district has increased from $100 to $800 per hectare over the past 15 years, while the value of irrigated farmland has remained largely unchanged, representing a significant reduction in real terms.

Source: Productivity Commission case study interview (appendix C).

In other industries, the pace of regulatory change is adding to the burden felt by farm businesses. The NSW Irrigators' Council said that it:

> … stresses that the timeframe imposed on irrigators and irrigation infrastructure operators to respond to these significant changes in water resource planning and management is inappropriate and must be reviewed with the focus of providing greater flexibility and time throughout the review process. (sub. 3, p. 4)

The Commission is likely to reconsider the regulation of farm dams and floodplain harvesting as part of its water-related responsibilities following the abolition of the NWC. In past inquiries, the Commission has found that the uncontrolled proliferation of farm dams and floodplain infrastructure could significantly reduce stream flow and the security of water entitlements. While the benefits of regulating overland flows are clear, governments need to consider the uncertainty and productivity costs of delays in implementation.

Summing up

Complexity and change in water regulation contributes to the cumulative burden felt by farm businesses, and this in turn reduces the incentives for farmers to innovate and invest.

Water trading within regions is beginning to work well (particularly where connectivity is high and transmission losses are kept to acceptable levels). It is providing farm businesses with a greater degree of agility to adapt decision making to changing market and seasonal conditions. Technology has helped to create effective trading mechanisms, and further developments are likely to make water trading easier and faster.

The potential to build on the productivity of water trading in Australian agriculture depends on:

- improving current systems for trading surface water and using technology to reduce transaction costs and allow real-time trading
- extending water trading mechanisms to regions outside of the Murray–Darling Basin
- extending the benefits of water trading to the allocation of groundwater and floodplain harvesting.

It has proven challenging (and slow) to extend water trading between regions, and to include groundwater and floodplain harvesting.

Australia's river catchments have very different physical characteristics across different regions. This physical diversity is matched or exceeded by the diverse characteristics of farm businesses using water, which is complemented by the diversity of ecological systems, urban communities and other industries using water. Byron (2010) argued that it is essential to consider this diversity when talking about 'delays' in water reforms under the NWI. Regional diversity may require slower processes that allow for more local ownership of agreed courses of action, within flexible principles that seek consistency rather than uniformity at a national scale.

DRAFT FINDING 4.1

Complexity and ongoing changes in water regulation contribute to the cumulative burden of regulation on farm businesses. However, the diversity of Australia's river catchments makes streamlining and harmonising regulation difficult. More flexible governance arrangements may be needed to develop locally appropriate regulatory settings for accessing water.

4.3 Regulating farm use of water

Most of the water used by Australian farm businesses is used to irrigate pastures and crops (figure 4.2). Unlike regulations governing *access* to water, Australia has few regulations that direct what farm businesses can *use* water for once they have the right to access it. Typically farm businesses are left to make decisions about how best to use water to meet their own productivity and profitability goals.

A recurring issue has been the degree to which non-agricultural users should be eligible to trade water in rural water markets. Restricting potential water users (such as urban water users and mining and power generation industries) from accessing the market prevents the market price of water revealing the true value of alternative water uses and in turn restricts the benefits to the community as a whole (PC 2006b).

Some water used on farms is not regulated. Most state legislation governing access to water excludes water used for domestic purposes and as drinking water for livestock, although these uses account for a very small fraction of overall water consumption. (This exemption does not apply to intensive livestock farming such as piggeries and feedlots.) However, as noted above, state and territory governments generally regulate the construction of dams and other infrastructure necessary used to provide water for livestock and domestic uses.

While direct regulation of water use does not appear to be an issue, it is likely that the regulation of water access and disposal could influence which agricultural activities are profitable to irrigate. Regulations influencing the amount, seasonal availability and cost of water are likely to influence the profitability of irrigating crops and pastures that have dissimilar water requirements. Whether or not this influence is efficient depends on whether a confluence of regulatory impacts (such as exit fees) prevent water from being traded to its highest value uses.

4.4 Regulating farm disposal of water

Water used on farms can be recycled for reuse or returned to the environment via surface or groundwater. From the perspective of regional water planning, accounting for return

flows is important for managing the security of water entitlements throughout each catchment (PC 2006b). Existing entitlements and seasonal allocations in many areas are based on the expectation that, when water is applied on farm, some proportion of that water returns to the hydrological system through seepage or runoff. As such, changes in return flows (resulting from land-use changes), need to be accounted for in entitlement specifications and/or resource management policies (PC 2010b).

A direct operational concern that must be dealt with at the operational level by farm businesses is the regulation of water quality. Water returning to streams can contribute to the health of downstream communities and ecosystems. To avoid and manage adverse downstream impacts, all Australian states have an independent statutory authority (known as environmental protection agencies or authorities (EPAs)) (or equivalent government department) that regulates water pollution, including the disposal of water from farms. These regulations typically set minimum quality standards for water leaving farms.

Water quality and effluent discharge are regulated by a range of environmental legislation (chapter 3). Regulations can require farm businesses to contain and reuse effluent and prevent it from leaving a property or entering waterways. Most state governments require intensive industries such as sugar mills, piggeries and poultry farms to be licenced to ensure compliance with pollution control regulations. In some areas of Australia, including the Murray–Darling Basin, the contribution of water leaving irrigated farms to in-stream salinity is subject to regional water management plans (NSW OEH 2013).

There are also a range of industry-specific guidelines that address, for example, manure and effluent management in intensive livestock systems (examples from the pork industry are provided in chapter 3). The Consolidated Pastoral Company noted that the National Beef Cattle Feedlot Environmental Code of Practice specifies outcomes that include 'preventing or minimising adverse impacts' to surface or ground water (sub. 71, p. 79).

The benefits to farm businesses of regulations that control the disposal of effluent and water include improvements in the quality of water that they can access from waterways and aquifers, and the environmental amenity of healthy rivers systems and wetlands. Soil and nutrients lost in water disposed from farms represent foregone opportunities to reduce input costs and increase productivity. Improved effluent management can also improve food safety, contributing to human health and providing innovative industries with a marketing advantage to offer consumers.

Complying with water regulations that improve water quality can help agricultural industries to sustain their 'social licence to operate' within the broader Australian community. As the Canegrowers said:

> Sugarcane's proximity to the Great Barrier Reef continues to pressure growers and industry on their social licence to operate. Canegrowers continues to participate in the Federal Reef programs including Reef Programme through Reef Plan and Reef Trust through Reef 2050 Long Term Sustainability Plan relating to water quality improvement and the resilience of the Great Barrier Reef. (sub. 22, p. 4)

Is it effective and efficient to regulate the disposal of water?

While regulation of water disposal can have benefits to farm businesses (and the community more broadly), there are also costs of complying with these regulations, including the costs of installing effluent capture and processing technologies. The costs of compliance can also include the foregone productivity benefits associated with reducing the intensity of farming to meet environmental standards.

According to Canegrowers (sub. 22), the balanced use of herbicides and mechanical cultivation in sugarcane production can improve productivity and water quality while reducing the risk of damage to the Great Barrier Reef. However, a failure to harmonise these regulations can have adverse productivity and environmental consequences.

In a number of submissions to this inquiry, regulation of water disposal was often cited as part of a broader set of environmental regulations that farmers are required to comply with. Australian Dairy Farmers, for example, said that it 'wants planning and environmental legislative frameworks that foster a consistent and inclusive regulatory environment for a diverse dairy industry' (sub. 63, p. 3). This would recognise that many dairy farms are expanding and investing in new and more effective effluent management systems. The dairy industry is developing innovative ways to reuse effluent (Australian Dairy Farmers, sub. 63) that adds to productivity while reducing pollution and waste.

Environmental regulation is perceived by some farm businesses as complex and at times inconsistent. For example, according to the West Australian Pork Producers Association:

> … inconsistencies arise that encourage participants to question the fairness of the system. For example deep litter based sheds compared to effluent based sheds do not need a licence yet the moment pigs are put into sheds they suddenly need a licence. (sub. 24, p. 4)

Drainage design and water quality monitoring are also part of the regulatory requirements for applications to develop new intensive livestock businesses in peri-urban areas. In these areas, conditions imposed to protect other residents are said to be increasing the compliance burden for some farm businesses (Cordina Farms, sub. 65).

Farm businesses can benefit from the regulation of water disposal through secure water entitlements, increased productivity and improved water quality. Realising these benefits requires regulatory regimes that take an holistic approach to controlling diverse influences on the quantity and quality of water returned from farm businesses to the environment.

4.5 Water reporting

A number of participants told the Commission that water-related reporting associated with the Water Act 2007 and the Murray–Darling Basin Plan posed an unnecessary and increasing regulatory burden. Duplication and increased frequency of reporting were of particular concern. For example, the NFF said that:

> With the Australian Government's implementation of the *Water Act 2007*, there are now several Australian government agencies and authorities collecting water data … In many cases, the different entities require slightly different water information, or the information in different formats. State agencies also collect water data. All these different data requirements increase the cost of doing business for the irrigation companies, costs which are then passed on to farmers through water charges. (sub. 61, p. 16)

Farm businesses and other agricultural businesses must report water use to a range of Australian, state and territory government agencies. These include the MDBA, the Bureau of Meteorology, ACCC, Australian Bureau of Statistics, the Department of the Environment and the Department of Agriculture and Water Resources. For example, an irrigation infrastructure operator in New South Wales must provide information to multiple agencies (table 4.1).

Table 4.1 **Selected water reporting requirements of an irrigation infrastructure operator in New South Wales**
2014

Information	*Collection agency*	*Frequency*
Water supply and use	ABS	On request
	ACCC	Annual
	Bureau of Meteorology	Annual
	NSW Office of Water	Monthly
	State Water	Monthly
Water trade/market data	Bureau of Meteorology	Annual
	NWC	Annual
Performance data	NWC	Annual
	Bureau of Meteorology	Annual
	ACCC	Annual
	NSW Office of Water	Annual
Financial statements	ASIC	Annual
Water quality	NSW EPA	Weekly, Annual
Network characteristics	ACCC	Annual
Network Service Plan, Network Consultation Paper	ACCC	Five-yearly

Source: Murray Irrigation (2014).

According to Murray Irrigation, reporting imposes a significant regulatory burden on their business:

> A core concern for Irrigation Infrastructure Operators (IIOs) is the increased reporting requirements and the added complexity in the water market created by the multiple layers of State and Federal legislation and regulation. IIOs are licenced to operate under State legislation and therefore have significant reporting requirements at a State level, regulated in NSW under the *Water Management Act 2000*. Many of these reports supply the same information, albeit in a different format, to those supplied to federal agencies under the *Water Act*. (2014, p. 2)

The National Irrigators' Council (sub. 18) argued that this unnecessary regulatory burden has required some irrigation infrastructure operators to employ additional staff to meet their reporting obligations. The irrigation farmers that the Commission spoke to also said that they expend considerable effort in reporting water use (and this is often hampered by unreliable internet services).

In some cases, different types of data must be provided in different formats to the same agency. In other cases, the same data must be provided to different agencies. According to Retailer and Supplier Roundtable Ltd:

> The lack of a standardised format or system means that information provided to a local entity under one format cannot be shared with a federal or state entity, resulting in the farmer needing to provide similar data to the other agencies in a separate step. (2014, p. 18)

The Australian Food and Grocery Council (sub. 28) was also concerned about an increase in compliance costs resulting from water-related reporting obligations. It indicated that multiple water usage and water quality parameters must be reported to government agencies under the:

- Environment and Resource Efficiency Plan, water management action plan and annual waste returns in Victoria
- ongoing Water Efficiency Management Plans in Queensland and Western Australia
- Water Savings Action Plans — New South Wales
- water discharge reports required by state Environmental Protection Agencies
- reports to water retailers such as Sydney Water and Yarra Water.

The overlapping nature of water reporting requirements was also noted in various submissions to the 2014 review of the Water Act (such as NFF (2014c), NSWIC (2014) and Waterfind (2014)). For example, Australian Dairy Industry Council Inc and Dairy Australia stated that:

> … similar water information is collected, aggregated and distributed by the Bureau of Meteorology, the MDBA, State water departments, state water corporations, the ACCC, the National Water Commission, ABARES and the [Commonwealth Environmental Water Holder]. (2014a, p. 8)

The Commission notes that steps have already been taken to understand the burden caused by reporting, and to streamline reporting requirements to reduce this burden. As a result of the 2014 review of the Water Act, an Interagency Working Group[4] reviewed the water information reporting burdens under the Water Act as well as other reporting of water-related information to other Australian government agencies. Its objective was to reduce the regulatory burden associated with providing water information to the Australian Government (IWG 2016).

In the review, the Interagency Working Group made a number of recommendations and proposals to reduce information reporting requirements while achieving the objectives of the Water Act 2007.

These include:

- amending the water regulations to reduce information requests on rural water entities from 37 subcategories of information to 10 subcategories of information
- investigating obtaining water use data just from state agencies
- consolidating information requirements
- investigating the concept of a single portal for the supply of water information to the Australian Government (IWG 2016).

The Interagency Working Group estimated that implementation of its recommendations could reduce the reporting-related regulatory burden on agricultural businesses by over 20 per cent (IWG 2016).

The Commission's view is that benefits of reporting in terms of improved policy development and implementation need to be carefully weighed against the costs imposed on agricultural businesses. An important first step is to adopt the reforms suggested by the Interagency Working Group.

DRAFT RECOMMENDATION 4.1

The Australian Government should implement the findings of the Interagency Working Group on Commonwealth Water Information Provision to reduce duplicative and unnecessary water management information requirements imposed on farm businesses.

4 The Interagency Working Group was comprised of representatives from the ABS, Australian Bureau of Agricultural and Resource Economics and Sciences, ACCC, Bureau of Meteorology, Australian Department of the Environment, MDBA and the Australian Treasury (IWG 2016).

5 Regulation of farm animal welfare

Key points

- Animals (sheep, cattle, pigs and poultry) are an essential part of the agriculture sector. Their outputs, such as milk, wool, meat and eggs, are basic elements of the food and fibre chain. While most Australians accept the rearing of animals for commercial purposes, many Australians place a value on their health and wellbeing (welfare).
- Good animal management practices are an essential part of livestock operations. Producers have an incentive to improve animal welfare where it increases the productivity and profitability of their businesses, including to meet changing consumer demands for higher welfare products. But animal welfare and production do not always go hand-in-hand.
- The challenge for policy makers is to determine the level of regulation that balances the costs of improved animal welfare against its value to the community.
- The development of national mandatory standards and voluntary guidelines aims to improve animal welfare so that standards reflect contemporary scientific knowledge and community expectations. However, progress has been very slow and standards do not adequately take account of community expectations.
- To give consumers and the Australian community confidence that acceptable welfare standards for farm animals are in place, the current approach to developing national standards and guidelines needs to be improved by:
  - clarifying the objective of the standard setting process
  - relying more on rigorous research and evidence on community values for animal welfare
  - more independent and robust application of regulatory impact assessment processes.
- While there are a number of options for improving the current arrangements, the Commission's preferred option is for an independent body to develop the national standards and guidelines. The body would also disseminate information on best-practice farm animal husbandry, including through further development of the standards and guidelines.
- If state and territory governments were more transparent about the monitoring and enforcement activities they undertake, this would also help to improve community confidence that animal welfare standards are being achieved.
  - Monitoring arrangements could also be improved by recognising industry quality assurance schemes (that meet mandatory welfare standards and involve independent auditing) as a means of demonstrating regulatory compliance.
- There is general support from industry and welfare groups for the regulation of live exports.
  - The exporter supply chain assurance system (ESCAS) has led to some improvement in welfare for Australian livestock in some overseas export supply chains.
  - The regulatory burden of the system for exporters could be reduced through greater cooperation and sharing of audits and costs between exporters. Development of an industry-led quality assurance program could, depending on its design, be used over time to demonstrate live export welfare assurance.
  - The independent body could also regularly assess the performance of the ESCAS.

Animals (cattle, sheep, pigs and poultry) are a fundamental part of the livestock industry and their outputs such as milk, meat, and eggs are basic elements of the food supply chain. Other outputs, such as wool and hides, are also important components of leather and fabric production. The gross value of livestock production during 2014-15 was about $27 billion (about half of the total value of agricultural production) (ABS 2016g).

Australians generally accept that it is appropriate to rear animals for commercial purposes (as revealed by their consumption of animals as food or in other products). They also place a value on the welfare of farm animals and expect, and benefit from knowing, that farm animals are being treated humanely (both from an animal wellbeing and animal health perspective). That said, there are some Australians who do not consider it appropriate to use animals for commercial purposes. For example, Vegan Australia (sub. 25) advocates for animals to be able to live free from human use.

Animal welfare issues have received increased attention in Australia in recent years, particularly following exposure of malpractice in the livestock sector through electronic media. The temporary suspension of live exports to Indonesia in 2011 is a prominent example. The suspension was in response to community concern following ABC's *Four Corners* airing of footage of mistreatment of animals in Indonesian abattoirs. Issues relating to housing systems, such as stalls for pigs and cages for hens, have also been the subject of animal welfare campaigns. Exposure of incidents of mistreatment has raised community awareness and influenced consumers' attitudes.

A number of animal welfare concerns were raised in this inquiry, including that:

- animal welfare regulations are not meeting community expectations about the humane treatment of farm animals
- there is a risk that unnecessary regulations will be imposed on farmers based on emotive reactions rather than evidence (such as what represents an improvement in the welfare of farm animals and how this is valued by the community)
- the current arrangements are a patchwork of different standards
- there are conflicts of interest under the current governance arrangements.

This chapter looks at the concept of animal welfare (section 5.1), the role for government (section 5.2) and farm animal welfare regulations in Australia (section 5.3). The objectives of the regulation and the current process for developing and enforcing farm animal welfare standards within Australia are examined in section 5.4, and options for improving the regulations are discussed in section 5.5. The arrangements for regulating the welfare of Australian live exports in overseas supply chains are also examined (section 5.6).

5.1 The concept of animal welfare

The concept of animal welfare is elusive and has a number of dimensions, including psychological as well as physical aspects, people's subjective evaluations, and historical

and cultural influences (PC 1998). Broadly, animal welfare is about animal health and wellbeing. The World Organisation for Animal Health (OIE, box 5.1) defines animal welfare to mean:

> … how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress. Good animal welfare requires disease prevention and appropriate veterinary treatment, shelter, management and nutrition, humane handling and humane slaughter or killing. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment. (OIE 2016c, p. 1)

The Australian Animal Welfare Strategy (AAWS) (discussed later) states that Australia accepts the international definition of animal welfare developed by the OIE. It also states that animal welfare reflects the ethical imperative and social expectation that the use of animals for human benefit should minimise suffering of the animals involved. Welfare is related to health and wellbeing, but extends beyond survival to consider the quality of an animal's life.

Box 5.1 Internationally agreed concepts of animal welfare

The World Organisation for Animal Health (OIE) is an intergovernmental organisation responsible for improving animal health worldwide. In 2002, the OIE's mandate was broadened to include animal welfare standards and to take the lead internationally in this field. It is recognised as a reference organisation by the World Trade Organization and in 2016 has a total of 180 member countries, including Australia.

OIE's guiding principles for animal welfare mention that there is a critical relationship between animal health and animal welfare and refer to the internationally recognised 'Five Freedoms of Animal Welfare' (published in 1965) to describe the right to welfare of animals under human control. According to this concept, an animal's primary welfare needs can be met by providing freedom: from hunger; from discomfort; from pain, injury or disease; to express normal behaviour; and from fear and distress.

Section 7 of the Terrestrial Animal Health Code sets out recommended standards for the improvement of animal welfare. Specific welfare standards are included for the transport and slaughter of animals, and for beef, broiler chicken, and dairy cattle production systems.

Sources: Department of Agriculture, Fisheries and Forestry (2015c); OIE (2016a, 2016c).

While concern for animal welfare is widespread throughout the community, the underlying set of ethical values used to interpret and act on this concern varies between individuals and groups, particularly as ethical concerns are not always matched with consumption decisions. This raises significant challenges for policy makers.

5.2 A role for government in farm animal welfare?

Good animal management practices are an essential part of commercial livestock operations. Many welfare improvements increase the productivity and profitability of livestock production. For example:

- a stockperson training program (ProHand) developed by the Animal Welfare Science Centre[5], has been shown to increase milk yields in cows, and increase litter sizes and growth rates in pigs (AAWS 2016)
- low stress handling and slaughter practices (that maintain glycogen (sugar) levels) can also help to improve the quality of meat (UN FAO 2001).

Australian Pork Limited (sub. 37, p. 6) said 'the single most important factor in addressing the welfare of animals is the husbandry skills of the stock-people'. Other welfare attributes that improve livestock productivity and are essential for good livestock production processes include good housing, nutrition and protection from diseases.

From a production perspective, the value of a farm animal is determined by what it contributes to the economic output of the production process and this varies between extensive (grazing) and intensive (housed or closed-stock) systems that use ruminant and non-ruminant animals. As such, the way an animal is treated (in terms of food, shelter, disease management and so on) is influenced by what is required to achieve the highest level of productivity (the cost of which the producer will generally seek to recover in the sale of the product). Above all, high mortality rates (a simple but useful measure of animal welfare) are typically at odds with productivity.

As noted by the (then) Australian Government Department of Agriculture,[6] there is also a link between animal welfare and industry profitability, where improvements in animal welfare can contribute to improved competitiveness and community acceptance of livestock animal welfare arrangements. This can lead to better domestic and export market access, higher prices and enhanced long-term sustainability (DoA 2015e). Producers also have an incentive to improve animal welfare to meet changing consumer demands for higher welfare products.

Also, in practice, some producers will be influenced by factors other than profit, including attitudes to risk, concern for the environment and animals, maintaining a certain way of life, and farm succession (FAWC 2011). Maintenance of cash flows and land values may also be important for some farmers, particularly in pastoral zones.

---

5 The Animal Welfare Science Centre comprises four collaborative partners — the Victorian Department of Economic Development, Jobs, Transport and Resources; the University of Melbourne (Faculty of Veterinary and Agricultural Sciences); the South Australian Research and Development Institute; and the University of Adelaide (School of Animal and Veterinary Sciences).

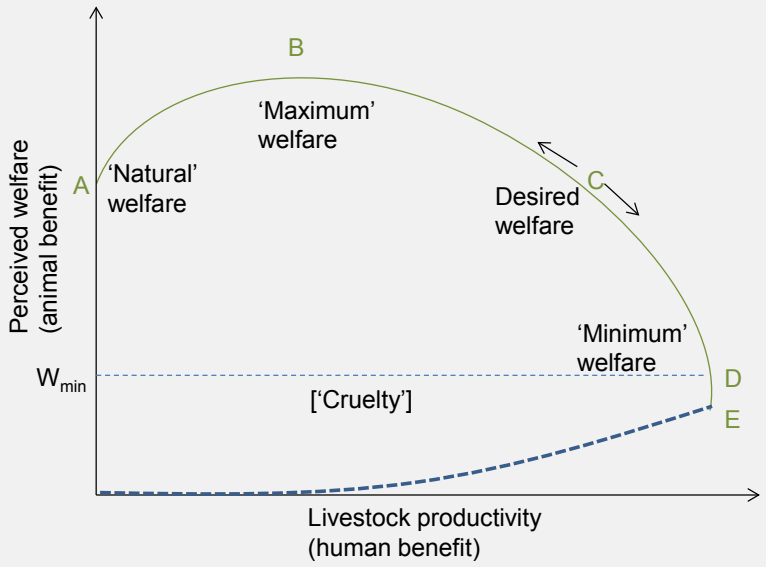
6 Now the Department of Agriculture and Water Resources.

But animal welfare and production and profitability do not always go hand-in-hand (box 5.2). Some welfare measures can involve costs for farmers with little or no offsetting gains to the business. Examples include:

- where welfare measures reduce the intensity of livestock production, for example, by lowering stocking densities in poultry systems used for egg production
- the use of pain relief for invasive procedures such as mulesing or castration, that impose costs with limited offsetting productivity improvements.

Box 5.2 Conceptual relationship between productivity and welfare

A generalised relationship between the productivity of livestock and livestock welfare can be conceptualised using production economics. At low levels of output, there is complementarity between increased livestock production from better practices (such as nutrition, housing, and disease control) and livestock welfare outcomes. Ultimately, however, a point *may* be reached where further productivity increases come at the cost of animal welfare as livestock 'intensity' increases and production techniques seek to maximise the biological potential of livestock.



Points along the 'welfare-productivity frontier' (green line) are associated with different preferences for animal welfare outcomes. Livestock producers will occupy different positions on the frontier depending on their enterprise (dairying, organic, grass-based, etc.) and the intensity of their production system. Nevertheless, general consensus about what constitutes animal cruelty will determine a minimum level of animal welfare that society expects and which may set the threshold for government regulation. McInerney (2004) argues that beyond this point it is a matter of choice as to how animals are farmed, and how the balance between the economic value attached to their output and the value attached to their welfare should be resolved.

While this 'welfare-productivity frontier' provides a useful theoretical depiction of the relationship between livestock productivity and welfare, a potential limitation is that it is too generalised to represent both intensive and extensive production systems. Further, it is not necessarily the case that increases in intensity are always associated with lower welfare outcomes.

Source: McInerney (2004).

Producers may still have an incentive to adopt such measures if the final product can be sold at a higher price — examples are free range eggs and pork — although prices for these products may not relate to other (non-housing related) welfare attributes, such as use of invasive procedures without anaesthetic.

Producers may also have an incentive to adopt and promote higher animal welfare in response to changes in community values to avoid the risk of new regulations, which could be more costly than industry-initiated welfare measures.

Public benefits of farm animal welfare

In principle, the community attaches a value to farm animal welfare that is distinct from the value that animal welfare contributes to the productivity and profitability of the farm business. As noted above, this value may not be reflected in the production process where farmers are seeking to maximise profitability. Farm animal welfare is important both to consumers of animal products as well as others in the community (those who are not consumers of animal products and are not directly involved in the production of animal products) who feel concern or discomfort about the mistreatment of animals. Viewed in this way, farm animal production can impose negative externalities on society and this implies a role for government, but only if the costs of government intervention are outweighed by the benefits to the community.

Evidence shows that consumers assign a positive value to increased animal welfare, although the extent to which they are willing to pay a higher price for products that have higher animal welfare standards varies. For example:

- in a meta-analysis of the literature, consumers across several countries were found to be consistently willing to pay price premiums for better housing conditions for caged hens (Lagerkvist and Hess 2011)
- consumers in Western Australia were found to be willing to pay a premium for 'welfare friendly' broiler products (Patterson, Mugera and Burton 2015). Consumers in this study were most concerned about stocking density, hot metal blade beak trimming and poor litter quality.

By contrast, Glass et al. (2005) found that in Northern Ireland, a significant proportion of the public at that time were unwilling to pay for improvements in the welfare of pigs.

The evidence also shows that:

- demographics (age, income and gender) matter for willingness to pay for improved animal welfare (Lagerkvist and Hess 2011; Naald and Cameron 2011; Taylor and Signal 2009)
- respondents' self-rated knowledge of modern animal-based food production is positively related to willingness to pay (Taylor and Signal 2009). Coleman (2009) also suggests that surveyed attitudes on animal welfare would become progressively better

predictors of consumer behaviour the more attitudes are based on direct experience (in that case, experience and knowledge of the pork industry and its husbandry practices).

But people's views are not always consistent with their willingness to pay for higher welfare products. Taylor and Signal (2009), for example, refer to a number of Australian and international studies that found that consumers' attitudes to animal welfare are not always matched by their purchasing behaviours, or the experiences of farmers using alternative (higher welfare) production systems. Several studies have put forward explanations for this disparity.

- Harvey and Hubbard (2013) suggest that people may be more willing to pay a premium for higher welfare products if they could be sure that their contributions would make a difference to animal welfare or if they could be sure other people were willing to support animal welfare. These consequences are aspects of the 'free rider' problem, as well as information asymmetries between producers and consumers.
- Blokhuis et. al (2003) considered the limited availability and insufficiency of information about 'animal welfare friendly' products to be a greater barrier than the price of those products. Similarly, interpretations of welfare scores and the level of trust in animal welfare certification processes can affect the extent of changes to consumer behaviour (Kehlbacher, Bennett and Balcombe 2012; Nocella, Hubbard and Scarpa 2010). High transaction costs associated with uncovering information to inform decisions may pose a barrier to changes in purchasing behaviour.

Consumer choice can also be affected by product attributes other than animal welfare, such as taste, healthiness and food safety (Naald and Cameron 2011).

Nonetheless, most members of the community expect that farm animals will be treated humanely and in a manner that achieves a minimum level of welfare. This minimum level of welfare can be thought of as a public good in that all (or many) members of society derive a benefit from it.[7] The government has a role in ensuring this minimum level of welfare is achieved, where it would not otherwise be achieved as a result of the commercial incentives and actions of producers. This may suggest that the role of government be confined to addressing instances where farm animal welfare and profitability are not complementary. At the opposite end of the scale is a level of welfare that only some members of society would consider desirable, and which can be considered a private good for which there is a very limited role for government (McInerney 2004).

The challenge for policy makers is to determine the level of farm animal welfare that provides the highest net benefits to the community as a whole. That is, the level that

[7] For example, the benefit someone receives from knowing that a hen has improved welfare from that person's consumption of cage-free eggs does not prevent another person from also benefiting from the increased welfare the hen receives (that is, animal welfare is non-rival). Also, other people cannot be excluded from benefiting from the animal welfare embodied in the consumption of cage-free eggs (that is, animal welfare is non-excludable). These public good features of animal welfare mean that consumers may not purchase products that entail higher levels of animal welfare, even though they place a positive value on this (Lusk and Norwood 2011).

balances the value of farm animal welfare against the cost of achieving a certain level of welfare. This balance is not easily struck as some people value animal welfare highly while others derive relatively little benefit from improved welfare.

Ethical considerations are important in determining the acceptability of welfare standards, but it is critical that views about animal welfare are based on credible science. People may perceive a practice to be cruel because they misunderstand the actual welfare outcomes for an animal. For instance, people may believe 'free range' eggs to always be superior to cage egg production, but neglect the risks posed by predation, feather pecking and cannibalism in some free range systems (UK DEFRA 2005). And most people accept that there can be tradeoffs between standards and the costs and practicality of achieving them. For that reason, it is important that factual (scientific and economic) considerations are separated from judgements about what is appropriate (ethics) and that an effective governance framework is in place for this to occur.

5.3 Australia's animal welfare system

All levels of government in Australia are responsible for animal welfare, but primary responsibility rests with state governments. The Australian Government is responsible for animal welfare issues relating to international trade (including live animal exports) and international agreements (discussed in section 5.6). Local governments are responsible for some areas of animal control (such as cattle at large). Some local councils also make local laws for livestock welfare at saleyards, particularly where the Council is the freehold owner or manager of the relevant public land (Harding and Rivers 2015).

Codes of practice govern Australia's farm animal welfare system

Since the 1980s, the welfare of farm animals in Australia has been governed by a series of Model Codes of Practice. The codes set standards for different categories of farm animals, (including cattle, poultry, pigs, and sheep), land transport, processing, and saleyard codes. The codes were developed through a cooperative process involving state and territory governments in an attempt to achieve national consistency. They were endorsed through the (then) COAG Primary Industries Ministerial Council[8] and were adopted to varying degrees by state and territory governments — largely as voluntary standards, although some states and territories have adopted the codes as mandatory or have developed their own enforceable codes based on the model codes. For example, in South Australia most of the model codes are mandatory. Victoria's welfare standards and guidelines for pigs (which are based on the model code) are mandatory, and in New South Wales, its animal

8 The Primary Industries Ministerial Council became the Standing Council on Primary Industries, which was replaced with the Agriculture Ministers' Forum (AGMIN) that met for the first time in May 2014 (DoA 2014d; Joyce 2014).

welfare code of practice for commercial pig production is enforceable under regulation, which includes welfare requirements for poultry.

In 2005, the Australian, state and territory governments agreed to convert the model codes of practice into Australian Animal Welfare Standards and Guidelines for the welfare of livestock. This process was meant to convert the standards into mandatory requirements in state and territory law, and for the guidelines to be used as recommendations for good practice. The development of national standards and guidelines was a key feature of the AAWS (box 5.3).

Box 5.3 The Australian Animal Welfare Strategy

The Australian Animal Welfare Strategy (AAWS) was endorsed in 2004 by the then Primary Industries Ministerial Council (PIMC). The aim of the AAWS is to assist in the creation of a more consistent and effective animal welfare system. Six working groups were established, with representation from government, industry and sector specialist organisations. The working groups covered: animals in research and training; native and introduced wildlife; animals used for work, recreation, entertainment or display; aquatic animals; livestock and production; and pets and companion animals.

A key component of the AAWS is to create nationally consistent farm animal welfare policies by replacing 22 voluntary national Model Codes of Practice for the Welfare of Animals — that states and territories use to inform their animal welfare legislation and codes of practice — with nationally agreed Australian Animal Welfare Standards and Guidelines. The standards are mandatory, whereas the guidelines are voluntary. The intention is that, once endorsed by Agriculture Ministers, the standards and guidelines be implemented into legislation in each state and territory (Australian Animal Welfare Standards and Guidelines 2016).

The AAWS was coordinated by the (then) Department of Agriculture, Forestry and Fisheries on behalf of PIMC. PIMC was assisted by an Animal Welfare Committee (AWC) (which coordinated the involvement of government partners) and the Australian Animal Welfare Advisory Committee (which made recommendations on the expenditure of AAWS funds and assisted the AWC in setting the direction of the strategy) (DoA 2015c; Thornber, Kelly and Crook 2012).

Model codes of practice for farm animals differ from the legislative arrangements in place for the welfare of companion animals. Commercially farmed animals are exempted from the overarching anti-cruelty and duty of care standards included in animal welfare legislation. Most states' primary legislation allows for the adoption of codes of practice by regulation, with compliance with the code being a defence to prosecution for cruelty or breach of duty of care under the primary legislation.[9] The model codes of practice set different standards for the treatment of livestock compared with companion animals.[10]

[9] For example, in Queensland, the *Animal Care and Protection Act 2001* (Qld) (s. 40) provides that it is a defence to a charge of cruelty or breach of duty of care if there has been compliance with a relevant code of practice. This means that if a farmer was charged with a cruelty or breach of duty of care offence, and wished to rely on the code as a defence, he or she would need to demonstrate compliance with the code.

Animal welfare monitoring and enforcement functions

The agency responsible for enforcing animal welfare arrangements for commercial farm animals is usually the government department responsible for administering animal welfare legislation for farmed animals, typically primary industries or agriculture departments (table 5.1). Arrangements are generally in place between the relevant department and the RSPCA that outline respective monitoring and enforcement roles, with the RSPCA generally (but not always) dealing with companion animals, and the department dealing with farm animals.

Table 5.1 **Principal animal welfare legislation**
Current as at 30 June 2016

Jurisdiction	*Principal legislation*	*Administering department*
NSW	*Prevention of Cruelty to Animals Act 1979*	Department of Primary Industries
Vic	*Prevention of Cruelty to Animals Act 1986* *Livestock Management Act 2010*	Department of Economic Development, Jobs, Transport and Resources
Qld	*Animal Care and Protection Act 2001*	Department of Agriculture and Fisheries
SA	*Animal Welfare Act 1985*	Department of Environment, Water and Natural Resources
WA	*Animal Welfare Act 2002*	Department of Agriculture and Food
Tas	*Animal Welfare Act 1993*	Department of Primary Industries, Parks, Water and Environment
NT	*Animal Welfare Act 2000*	Department of Primary Industry and Fisheries
ACT	*Animal Welfare Act 2002*	Territory and Municipal Services Directorate[a]
Cwlth	*Australian Meat and Live-stock Industry Act 1997* *Export Control Act 1982*	Department of Agriculture and Water Resources

[a] The ACT Government does not have an agriculture department.

A similar approach is followed in Victoria, South Australia, the Northern Territory, the Australian Capital Territory and Western Australia (McEwen 2011; WA DAF 2015; White 2007).

10 For example, the model code of practice for domestic poultry (section 13.2) and the national standards and guidelines for sheep (section 7) do not require the use of anaesthesia when de-beaking layer hens or mulesing of sheep under 6–12 months old, whereas state animal welfare legislation prohibits the infliction of pain on animals without reasonable steps taken to alleviate pain. For example, see the *Prevention of Cruelty to Animals Act 1979* (NSW) s. 5(3)(b).

5.4 How are farm animal welfare standards set?

The objective of the farm animal welfare standards and guidelines

In 2005, the usefulness and relevance of the model codes of practice (which the national standards and guidelines are designed to replace) were questioned. The former Primary Industries Standing Committee asked the (then) Department of Agriculture to consider arrangements for reviewing and developing the codes as a basis for Australia's future livestock welfare regulation, and the arrangements were reviewed.

The 2005 review found that the codes did 'little to provide consistency', provided 'poor support to regulators', resulted in 'considerable additional work producing codes suitable to some States and generally satisfy few expectations' (Geoff Neumann and Associates 2005, p. 10). The review also found that the codes:

- had not routinely considered contemporary animal welfare science as a basis for a standard
- had not routinely involved preparation of an economic impact assessment
- did not provide the degree of national consistency in animal welfare policy and practice appropriate to Australia's position as a significant producer and exporter of livestock
- had a questionable impact on the welfare of animals.

The subsequent Business Plan for the development of the standards and guidelines outlines a vision and an objective for the standards and guidelines.

> **Vision**
>
> The vision is to establish national livestock welfare standards that reflect contemporary scientific knowledge, competent animal husbandry and mainstream community expectations, and that these are maintained and enforced in a consistent, cost-effective manner.
>
> **Objective**
>
> As a cornerstone of the Australian Animal Welfare Strategy, the national livestock welfare standards, with complementary guidelines, provide welfare outcomes that meet community and international expectations and reflect Australia's position as a leader in modern, sustainable and scientifically-based welfare practice. (AAWS 2009, p. 2)

A slightly different formulation of this objective was referred to in documents supporting the development of specific standards and guidelines. For example, the regulation impact statement (RIS) for the most recently endorsed standards and guidelines for cattle states that the policy objective is 'to minimise risk to cattle welfare and unnecessary regulatory burden in a way that is practical for implementation and industry compliance' (Tim Harding and Associates and Rivers Economic Consulting 2014, p. iv and 43). It also states that in terms of achieving this objective, the main criterion for evaluation is net benefit for the community.

The RIS further states that the main problem underlying the development of the proposed national standards is welfare risks for cattle due to deficiencies in the model code of practice and, to a lesser extent, uncertainty for industry due to lack of clear and verifiable standards and excess regulatory burden arising from lack of national consistency. Excess regulatory burden was not identified or quantified in the RIS, although some regulatory differences between jurisdictions were identified, for example, the requirements to provide pain relief for castration and other surgical procedures.

Different views on the objective of the national standards and guidelines will slow down progress on developing the standards. This was identified as an issue in a 2013 review of the process:

> This objective includes a requirement for the Standards and Guidelines to meet community expectations. There is, however, currently a relatively low understanding, or agreement, on what these expectations are. This is a gap in the current analysis and development of the Standards, which has contributed greatly to the problems of conflicts within the process. Without a strong statement of objective, each party involved in the process has their own benchmark of what the Standards should be seeking to achieve … (PwC 2013, p. ii)

The different views are reflected in polarised positions and concerns from animal welfare and industry groups. Animal welfare groups expressed concern that the standards have not gone far enough to improve welfare outcomes and are not meeting community expectations. Industry groups raised concerns about risks of excessive regulation (box 5.4).

Progress developing national standards and guidelines has been slow

Three sets of national standards and guidelines have been endorsed — for sheep and cattle (both in 2016) and livestock land transport (in 2013). Livestock saleyards and depots standards and guidelines have been developed and are pending endorsement from Agriculture Ministers, and the poultry code is currently in the process of conversion. Another 12 model codes are yet to be converted.[11]

The standards for land transport of livestock have been implemented in state and territory law in most states and territories. The sheep and cattle standards and guidelines are yet to be implemented. The New South Wales Government has indicated that it will not implement these standards as mandatory standards, but rather will reference them as voluntary guidelines under its prevention of cruelty to animals legislation (NSW Government 2015a).

The Tasmanian Department of Primary Industries, Parks, Water and the Environment (sub. 62) also said that its state's Animal Welfare Advisory Committee (which makes

[11] The Model Code of Practice for the Welfare of Animals — Pigs was being updated at the time the decision was made to covert the codes into standards and guidelines. This document retained the name and format of a code but contained standards that states and territories agreed to regulate (Thornber, Kelly and Crook 2012).

recommendations to the responsible Minister on the adoption of standards) has previously refused to endorse a national standard where it considers the standard to be too low. For example, the Tasmanian Government has given effect to most of the standards contained within the Model Code of Practice for the Welfare of Animals — Pigs (third edition), but does not apply standard 4.1.5 of the code and prohibits the confinement of sows in stalls except in some circumstances.

The RIS for the prohibition determined that there would be some initial adjustment costs (including capital costs and retraining costs) for the pork industry, but that over a ten year period there would be a small annual net benefit to the industry (Tasmanian Government 2013). The department stated that the higher standards address community concerns and provide a point of differentiation for Tasmanian pork products (sub. 62).

Box 5.4 Participants' views on farm animal welfare standards

When commenting on whether existing animal welfare regulations meet community expectations for the treatment of farm animals, RSPCA Australia said:

> State and territory regulations authorise systems of production and husbandry practices that fall well below community expectations … the primary concerns of the community relate to intensive confinement systems such as the use of battery cages for laying hens and individual stalls for sows, routine surgical procedures without pain relief, and food and water deprivation during transportation and at saleyards. (sub. 31, p. 1)

RSPCA Australia (sub. 31) also stated that the national standards and guidelines have not 'raised the bar' on animal welfare from those already in the model codes of practice. Similarly, Animals Australia (sub. 53) did not consider that animal welfare regulations were meeting community expectations about the humane treatment of farm animals. And Vegan Australia (sub. 25) suggested that if community expectations were met, many existing practices (such as procedures without anaesthetic) would not occur.

The Law Society of South Australia (sub. 44) pointed to a similar list of community concerns as were raised by RSPCA Australia (sub. 31) and suggested that existing animal welfare regulations required improvement to meet community expectations.

A number of agriculture industry groups and state government departments acknowledged the growing community concerns about the welfare of farm animals (Australian Pork, sub. 37; South Australian Government, sub. 57), but did not directly comment on whether existing regulations were meeting community expectations. The Western Australian Government, however, noted that 'any cost impositions from unnecessary regulation, based on emotion as opposed to that necessary to ensure the humane treatment of animals, will have a disproportionately larger impact on the export focused West Australian industry' (sub. 54, p. 31).

The Consolidated Pastoral Company (sub. 71) also said that rules governing animal welfare practices have been at risk of being politicised, resulting in excessive coverage. And the NSW Farmers' Association (sub. 72) argued that no case has been made for additional regulation above and beyond the Prevention of Cruelty to Animals Acts administered by state governments. It suggested that the appropriate course of action is to allow changes in production practices to be guided by economic drivers in the consumer sphere.

Despite difficulties associated with the development of the national standards and guidelines, participants to this inquiry and in other forums, including during development of the Agriculture Competitiveness White Paper, expressed support (to varying degrees) for a national approach to livestock welfare regulation (Australian Chicken Growers Council, sub. 51; Australian Chicken Meat Federation, sub. 40; Law Society of South Australia, sub. 44; VFF 2014).

The costs and benefits of a national approach to livestock welfare

A national approach provides scope to increase confidence in the community that livestock production is based on consistent welfare standards. As the Australian Farm Institute (AFI) said:

> Having inconsistent approaches and enforcement practices at state level makes it very difficult to adequately and effectively inform and educate consumers, and also has a direct impact on the competitiveness of national farm businesses. (Potard 2015, p. 76)

Consumers may be negatively affected if regulatory differences mean they are unable to compare the welfare attributes of like products. As RSPCA Australia said:

> A prominent example of this may be found in the case of free-range eggs. There is no consistent legal standard for what free-range means in the context of egg production and consumer confidence in the market has suffered as a result. (sub. 31, p. 4)

(Issues associated with consumer detriment from confusing or lack of understanding of welfare claims on food labels are discussed further in chapter 9.)

Producers may also be negatively affected by deficiencies or inconsistencies in standards, particularly where lack of clear and verifiable standards creates uncertainty for industry. A recent example of this is inconsistent interpretation of the domestic poultry model code, specifically the recommendations in relation to stocking density for free range layer hens. Some producers have interpreted the maximum stocking density to be 1500 hens per hectare while other producers have interpreted the section on range rotation to mean there is no maximum stocking density (chapter 9).

Some participants suggested that differences across jurisdictions have been detrimental to industry competition, with differences in approaches to free range hen stocking densities raised as an example in this context (Australian Veterinary Association, sub. 26; Law Society of South Australia, sub. 44). The Western Australian Government (sub. 54) and the Law Society of South Australia (sub. 44) considered that greater consistency would protect the image of the Australian livestock industry as well as the welfare of livestock.

Differences in regulatory arrangements can impose costs on businesses that operate in more than one state, particularly in the eastern states where not only are livestock transported across state boundaries, but also some farming businesses cross state boundaries. The Australian Chicken Meat Federation (sub. 40) said that companies operating in more than one state need to be checking their internal standards for

compliance with regulations on a state-by-state basis, rather than against one common set of standards and compliance procedures.

A nationally consistent approach can reduce costs from regulatory differences that result in additional transaction costs with no offsetting benefits. But there are significant challenges in developing a national approach that takes into account the interests and circumstances of all jurisdictions. There may also be tradeoffs that favour states tailoring regulations to their own circumstances and community preferences. As the Tasmanian Department of Primary Industries, Parks, Water and the Environment said:

> Tasmania adopts nationally agreed standards where possible but reserves the right to apply higher standards. National standards need to cover the whole of Australia and one of the challenges in developing them is that practices that are reasonable and acceptable in one part of the country may not be in another part. For example, due to the practical difficulty of inspecting animals in the extensive grazing areas of northern Australia, it is reasonable to apply a lower standard than in Tasmania where graziers face fewer challenges in inspecting stock. (sub. 62, p. 6)

National standard setting processes that align regulatory arrangements to the 'lowest (or highest) common denominator' are unlikely to be in the best interests of the community. While more (or less) stringent standards in some states may affect the competitiveness of some providers (by potentially raising their production costs relative to their interstate competitors), these costs must be balanced against the benefits to the community from improved animal welfare outcomes, particularly where the higher standards have been shown to better reflect community expectations.

On balance, the Commission considers that a consistent national approach, with flexibility in the standards to address local circumstances, is desirable. There may also be merit in prioritising the development of standards to areas (such as categories of farm animals, and production processes or practices) where there is significant community concern about livestock welfare, and where risk of adverse livestock welfare outcomes is greatest.

The Commission is concerned that progress in furthering standards and guidelines has been very slow. This may reflect the fact that some parties wish to preserve the status quo and see merit in delay, rather than directly addressing and arguing the various animal welfare standards. It would be in the interest of the community if the development of the standards and guidelines was expedited.

Concern that efforts to develop a national approach have stalled

In May 2014, the Australian Government ceased funding the AAWS and disbanded the Australian Animal Welfare Advisory Committee (AAWAC) as part of its 2014-15 Budget initiatives (Treasury 2014a). Australian Animal Welfare Standards and Guidelines are now being developed under the auspices of the Agriculture Ministers' Forum (AGMIN), the Agriculture Senior Officials Committee, and its advisory body on animal welfare issues, the Animal Welfare Task Group (AWTG).

A number of participants expressed concern about the AAWS process being abandoned. The Australian Veterinary Association said that:

> Since the AAWS was discontinued, the lack of an inclusive framework risks the development of greater polarisation within the community, and loss of community confidence. In recent years, we have seen the major supermarkets dictate welfare standards to industry in response to community pressure. These standards are developed in an ad-hoc manner, [and] are not generally science-based. This is a risk to our livestock industries whose best defence is to demonstrate compliance with recognised, science based, balanced and enforceable animal welfare standards. (sub. 26, p. 3)

A report by World Animal Protection noted that:

> … the AAWS no longer exists. Since its demise, Australia has no active strategy for progressing with the times on animal welfare. We have no national funding, no leadership, and no mechanism for coordinating the various voices with a stake in profiting from, protecting or policing the way our animals are treated. (2016, p. 3)

There are calls for the Australian Government to reengage and take on a coordinating role in harmonising animal welfare standards (AAAL 2014; ALFA 2014; ASWGA 2015; AVA 2014; NFF 2014a; VFF 2014a; Voiceless 2014). For example, the Victorian Farmers' Federation said it:

> … urges the Federal Government [to] put the issue of national animal welfare standards and guidelines back on the AGMIN agenda. But we must have a consistent national approach to the issue. (2014a, p. 23)

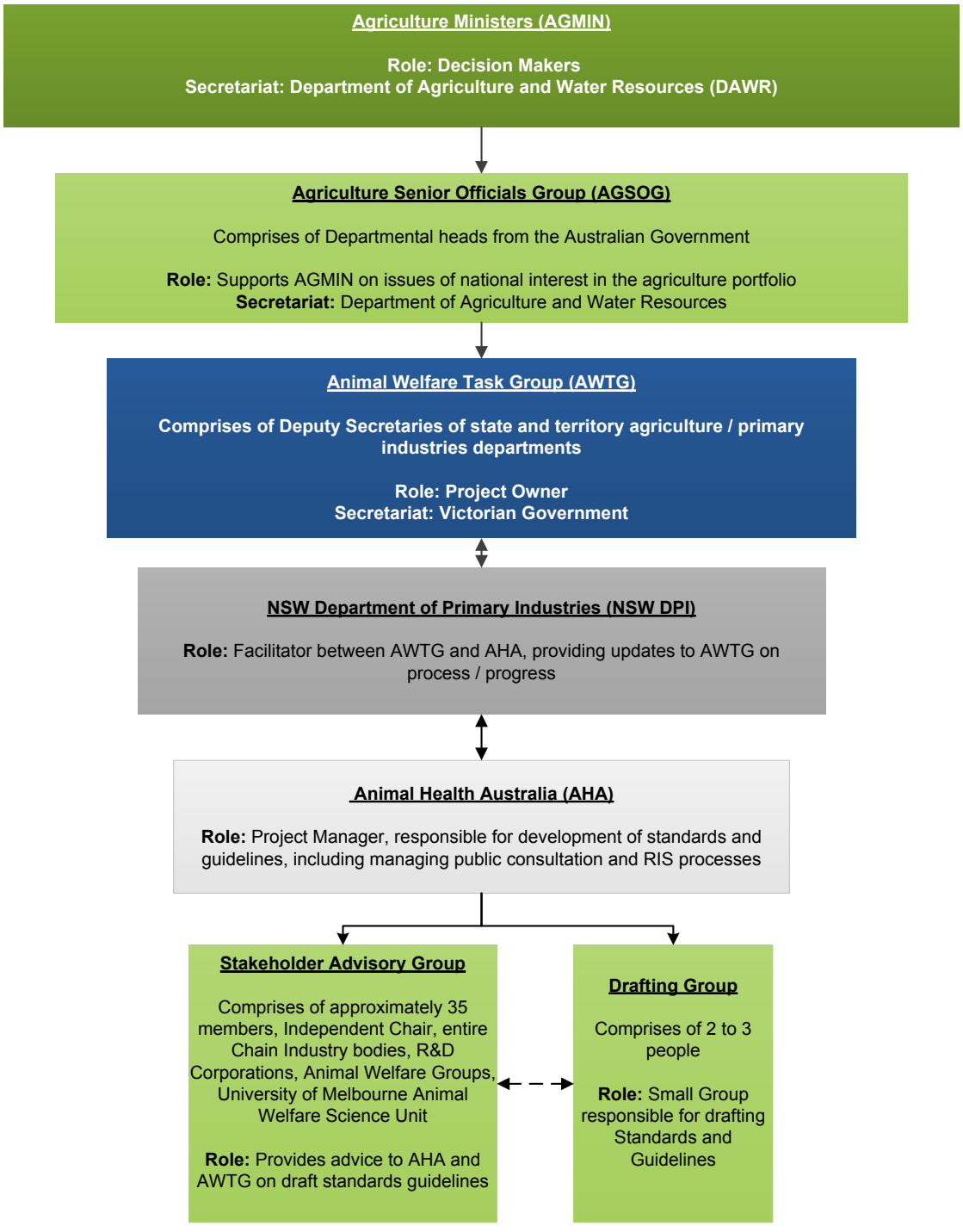
The Western Australian Government also said:

> Each state has different regulations, including roles of the relevant RSPCA, a matter which could benefit from greater standardisation. (sub. 54, p. 31)

Robust institutional arrangements?

The process for developing the national standards and guidelines is managed by Animal Health Australia (AHA) — a not-for-profit company that facilitates partnerships between governments and major livestock industries to protect animal health and the sustainability of Australia's livestock industry. AHA provides secretariat support for a stakeholder advisory group (comprising an independent chair, Australian and state government representatives, various industry members, and animal welfare representatives) and a smaller drafting group (which has the task of developing the standards and guidelines for review by the stakeholder advisory group) (figure 5.1). Funding for the development of standards and guidelines is split equally (on a one third each basis) between the Australian Government, state and territory governments, and relevant industry groups.

Figure 5.1 **Institutional arrangements for the development of the poultry national standards and guidelines**



The current standards setting process is different to the previous process (for transport, sheep and cattle), in part, because of the disbanding of the AAWAC and the Animal Welfare Committee. The AWTG is meant to play the role of the Animal Welfare Committee, and state and territory governments facilitate the standard setting process

(previously undertaken by the Australian Government) between AHA and the AWTG. For poultry, this role is being undertaken by the NSW Department of Primary Industries.

The Commission was advised that as a result of the review's findings, the drafting group now comprises a small number of people (2-3) with expertise in drafting standards. Previously, the drafting group consisted of about 9 people and included representatives from industry, science and government. The stakeholder advisory group (previously referred to as the standards reference group) has also changed. It includes only one active member from each relevant representative body (rather than multiple representatives from the same body), although the total size of the group is still large.

Box 5.5 **Review identifies opportunities to improve the process**

A 2013 review (commissioned by the then Primary Industries Standing Committee's Animal Welfare Committee) of the process for developing animal welfare standards and guidelines identified a number of opportunities to improve the process.

- *The objective of the animal welfare standards and guidelines*. The review noted that there is little understanding of, or agreement on, what community expectations are, which has contributed to conflicts in the process, particularly between industry and animal welfare groups. The review recommended the use of focused research and surveys to improve understanding of community expectations and values, with the outcomes of the research balanced with industry input and scientific knowledge on animal welfare matters.
- *The structure of the standards and guidelines*. Some stakeholders to the review suggested that including both standards and guidelines in the same document created confusion as to the role of the guidelines and their enforceability. On balance, the review recommended that guidelines be retained in the document and that industry take a higher level of responsibility for promoting the guidelines as representative of good industry practice.
- *Process structure and roles.* The review found that the structure of the process involved the appropriate elements but that there was a need for greater clarity and demarcation of the role of each party. The review recommended that the roles of project manager, standards development and drafting, representative advice and comment, and decision making, be clearly articulated. The reference group should be confirmed as a body for representative advice, not decision making. Standards development and drafting should be conducted by an individual or group (not a representative body) with expertise in standards development and be provided with legal support for drafting so that the standards are 'regulation ready'.
- *Conflict resolution*. Conflict between parties was identified as a major impediment to agreeing on standards. Animal Health Australia (as project manager) has endeavoured to mediate between parties but there was a strong view that this was not their role. The review recommended that meetings be facilitated by an independent person, and that the RIS process be more clearly used to consider a range of options and reflect on evidence.
- *Evidence-based decision making*. The review noted that there were significant gaps in knowledge of current practices and costs of alternatives, which makes it difficult to understand the extent of the 'problem'. It recommended that small research tasks be conducted (with emphasis on engagement of research independent of other interested parties) to support the RIS, and that future RIS development be properly resourced.

Source: PricewaterhouseCoopers (2013).

The stakeholder advisory group is chaired by an external consultant, and matters of contention will be referred to the AWTG to avoid long delays. Previously, AHA attempted to resolve contentious matters. The 2013 review recommended that the reference group be confirmed as a body for representative advice, not decision making, and that it should be clear to all parties that the ultimate decision maker for the standards is the Standing Council on Primary Industries (now AGMIN).

Background information for the poultry standards process states that the RIS will incorporate public consultation feedback and changes made by the majority of the stakeholder advisory group (AAWSG 2016). Any majority decision will be strongly influenced by the composition of the group, which in the case of poultry comprises a large number of members, the majority of which represent the poultry industry.

Although the 2013 review considered the role of AHA to be a strength of the process, it also noted concerns from animal welfare groups and some government representatives that AHA as an organisation is more closely aligned with industry positions, and therefore may not be sufficiently independent in the process. Goodfellow, Tensen and Bradshaw (of RSPCA Australia) have subsequently observed that the nature of this conclusion is indicative of the 'flawed approach taken to consulting with stakeholders during the standards development process itself' (2014, p. 45). (The review consulted 31 representatives of 20 livestock industry groups and four representatives from animal welfare organisations). They further stated that 'in basing its conclusion on the views of the "majority of stakeholders", the concerns of animal welfare stakeholders are simply overshadowed by those of the livestock industries' (Goodfellow, Tensen and Bradshaw 2014, p. 45).

RSPCA Australia, noting the challenges around implementing agreed national standards, said that:

> Even when a set of standards have been finalised by stakeholder reference committees and endorsed for implementation by state and territory agriculture ministers, political lobbying by industry groups can nevertheless result in last minute changes … This is a reflection of the fact that state agriculture departments and ministers are especially susceptible to influence from state farming organisations and this raises broader questions regarding the governance arrangements for the development of animal welfare policy and standards. (sub. 31, p. 5)

RSPCA Australia further stated that it was concerned that failure to properly take into account community expectations is continuing under the current process, and that it was not aware of any plans for such research to be undertaken in future standards development processes. The Commission understands that the primary way in which community views and values will be considered is through the public consultation process supporting the development of the RIS.

Concerns about impartiality, transparency and accountability in the standards development process are also raised in the animal law literature. Ellis (2010) raised concerns about significant input from bodies whose interests she described as 'essentially antagonistic' to those of animals. Mundt (2015) (a legal representative for Animals Australia) suggested

that the involvement of industry in the development of standards (through their role as members of AHA) allows them to exert disproportionate influence.

Disproportionate industry influence in the standard setting process was also raised as a concern by Animals Australia, which argued that this was an area in urgent need for reform:

> … particularly to remove the bias and inherent conflicts of interest that pervade animal welfare standard-setting and enforcement regimes which are dominated by industry capture and government agriculture department oversight. (sub. 53, p. 1)

It pointed to the newly endorsed sheep standards and guidelines as evidence of this — specifically, the failure of the process to endorse pain relief for lambs undergoing mulesing[12] as an enforceable standard (box 5.6). The RIS assessment with respect to pain relief for mulesing was that the net incremental welfare benefits did not justify the additional compliance costs for farmers. This was based on the views of the standards reference group (now the standards advisory group). A similar approach was used when balancing compliance costs against welfare benefits for other welfare measures in the sheep standards, as well as in the cattle standards.

Compliance costs to industry are a critical consideration in any benefit–cost assessment. However, these costs are only one element of a rigorous benefit–cost assessment. Other relevant elements are the distribution of compliance costs, including the degree to which they can be passed on through the supply chain, including to consumers (to determine who bears the burden of the costs). For example, the RIS for Tasmania's restrictions on the use of sow stalls stated that the price elasticity of demand for pork in Australia was high (according to research from the Rural Industries Research and Development Corporation), limiting the capacity for pork producers to pass costs on to consumers without losing market share (Tasmanian Government 2013). Costs to industry (reflected in lower demand from higher prices) need to be weighed against the intangible benefits to the community from improved animal welfare outcomes.

Assessing community attitudes and values for farm animal welfare

Neither the extent of improvements in animal welfare from changes in standards nor the benefits derived by the community are amenable to reliable quantitative assessment. As such, an element of judgment is required. Judgments should be informed by a transparent process that identifies community values and demonstrates how these values are balanced against costs to industry. This is a complex task that requires independent analysis and robust techniques for testing community values.

[12] Mulesing is the removal of wrinkled skin from the breech and/or tail of a sheep using mulesing sheers. Mulesing is used to reduce urine and faecal soiling or dag formation in the breech of tail wool to minimise susceptibility to flystrike (Tim Harding and Associates and Rivers Economic Consulting 2014).

Box 5.6 Case study: the costs and benefits of changes to sheep mulesing standards

The Regulation Impact Statement (RIS) for the Australian animal welfare standards and guidelines for sheep notes that the most controversial issues raised in consultations for the RIS related to mulesing and other surgical procedures (such as castration and tail docking) without pain relief, availability of water and provision of shelter, and methods of slaughtering sheep.

In 2004, the wool industry agreed that mulesing would be phased out by the end of 2010, and although this is still the longer term goal, there is no longer a fixed date. The Australian Wool Innovation and the Australian Government have invested in researching alternative methods of breech flystrike prevention, which include breeding of resistant sheep, anti-fly strike clips, intradermal injections and blow fly control.

The RIS states that 'mulesing is a very painful procedure and involves a greater degree of tissue trauma than other surgical husbandry procedures such as castration or tail-docking' (p. 40). It refers to a 2007 study that found that lambs mulesed with no drug application exhibited large increases in the stress-responsive hormone cortisol, reduced lying and increased standing with a hunched back compared with unmulesed lambs. It further stated that available scientific research suggests that it is possible to achieve pain relief (including by using a spray application of Tri-Solfen) in conjunction with mulesing.

Under the base case of the RIS, 4.86 million lambs per year were estimated to be mulesed without pain relief (based on ABS data and farm surveys results). The estimated cost associated with using pain relief for these sheep was $33 million over ten years ($0.45/sheep). The benefits of increased animal welfare outcomes were attributed to the lambs and were unquantified. The RIS did not discuss the value to the community from this increased level of sheep welfare. The overall assessment for this option of the RIS was that the net incremental welfare benefits for 4.86 million sheep per annum did not justify the additional compliance costs for farmers. The RIS states that this assessment was based on the views of the standards reference group meeting from December 2015. The reference group comprises representatives of 11 national livestock industry organisations (including those representing the livestock transport industry, and production, saleyard, feedlot and processing sectors for sheep), two animal welfare organisations, representatives from the eight state and territory governments, the Australian Government, and the Australian Veterinarian Association.

The preferred sheep standards in the RIS were endorsed by the Agriculture Ministers' Forum in January 2016. On 23 March 2016, the NSW Parliament passed a motion urging the state's wool producers to provide pain relief when mulesing sheep and to breed sheep that are less susceptible to fly strike. The motion called for the 20 per cent of wool producers who do not use pain relief or breed more fly-strike resistant sheep to do so.

Sources: Animal Health Australia (2014); Parliament of New South Wales (2016).

A number of methods have been used to assess community attitudes to animal welfare, including surveys conducted by commercial providers on behalf of governments or industry groups (box 5.7). In Europe, the Eurobarometer is used to gauge public opinion on a range of issues. A special 2016 Eurobarometer on attitudes to animal welfare found that of those people surveyed (approximately 1000 in each country) the majority thought it was important to protect the welfare of farmed animals (94 per cent of respondents) and

believed that the welfare of farmed animals should be better protected (82 per cent) (European Commission 2016a).

Box 5.7 What do we know about community attitudes to farm animal welfare?

A survey of Australians' relationships with animals found that '52 per cent of respondents thought that factory-farming methods of producing meat, eggs, and milk (which are becoming dominant trends) were cruel' (Franklin 2007, p. 19). The data comes from a survey of 2000 representative Australians.

A 2012 study commissioned by the Victorian Government found that 23 per cent of Victorians surveyed valued animal welfare highly, but had a relatively low level of trust that farmers would address these issues without coercion (Parbery and Wilkinson 2012). Another Australian survey found that:

- 61 per cent of surveyed respondents thought that animals deserve some protection from harm and exploitation but that it is appropriate to use them for the benefit of humans
- 30 per cent thought that animals deserve the same rights as people to be free from harm and exploitation
- 4 per cent thought that animals do not need much protection (EMC 2012).

The public consultation document supporting the welfare standards and guidelines for sheep stated that 51 per cent of surveyed respondents did not agree that the standards would help to protect the welfare of sheep, although the agreement ratings for individual standards was high. A similar result was found for the consultations for the cattle standards (Animal Health Australia 2014).

Research also shows that Australian consumers' preferences for some products, such as free-range eggs, are primarily driven by animal welfare concerns, but can also be influenced by other factors such as taste, health and price. Over the past decade, there has been an increase in the proportion of retail free-range eggs sold, from 15 per cent to 39 per cent (chapter 9).

Changes in standards in other developed nations and in Australia may also be indicative of changes in community expectations for animal welfare. The ACT has passed legislation to prohibit sow stall, farrowing crate and battery cage production practices, although there is only one commercial egg producer and no pig farming operations within the ACT. Tasmania has restricted use of sow stalls to 10 days within a reproductive cycle (Tasmanian DPIPWE, sub. 62).

Determining community expectations for the welfare of farm animals is challenging, as views on animal welfare can be polarised and community attitudes can change over time. As the AFI said:

> The challenge associated with this policy area lies in the development of structures that have the capacity to deliver balanced outcomes over time, rather [than] responding to short-term or political developments in a piece-meal and haphazard manner. (Potard 2015, p. vi)

Perceptions of animal welfare can also be influenced by a lack of information about farming practices, or indeed, about misperceptions of practices. A common view is that animals should be allowed to lead natural lives by displaying their normal behaviour in a

reasonably natural environment. But as pointed out by research from the Animal Welfare Science Centre, natural environments often contain hardships, such as climatic extremes, food shortages and predators. Also, it is unclear what constitutes the natural environment for a domestic hen given its long history of selective breeding. Scientific knowledge of design features of animal housing from the perspective of animal welfare is also often poor (Hemsworth, Coleman and Skuse 2014).

Some research on consumer expectations for farm animal welfare shows that Australians have widely different views. An example is research on what stocking density provides an acceptable level of welfare for free-range layer hens. Research from CHOICE suggests that a very small proportion (2 per cent) of free-range egg buyers consider 10 000 hens per hectare to be acceptable. In contrast, research commissioned by the NSW Farmers' Association suggests that 10 000 hens per hectare meets or exceeds consumers' expectations (chapter 9). The way in which research is undertaken, including the way questions are posed, can significantly influence survey results (chapter 9 discusses some of the issues associated with the above surveys).

A 2009 study on tools to assess community attitudes and consumer responses to animal welfare in the pork industry (funded by the Department of Agriculture and Australian Pork Limited) found that attitudes do not predict meat purchasing behaviour to any major extent. Rather, they predict other community behaviours (such as donating money to a welfare organisation, signing petitions, or speaking to friends or family about a welfare issue) that may affect government policy makers. The study noted that attitudes are more reliable predictors of behaviour if based on knowledge and experience of farming practices. It recommended that surveys include questions on these matters. It also recommended that, because generic attitudes provide an indicator of trends in community values (and because decision makers respond to these), general attitudes to welfare be monitored (including through a large-scale survey conducted every few years) (Coleman 2009).

It is imperative that the community has confidence that research used to inform policymaking is unbiased, credible and is conducted by qualified, independent researchers using robust research methods. It is also essential that a broad spectrum of consumers and members of the community are able to participate in the process.

Ultimately, judgment about whether the benefits to the community of changes in animal welfare outweigh the costs is a matter for government. Some groups consider that government is not adequately fulfilling this role, mainly because advice to inform decision making is provided by representatives from departments of primary industries, whose principal objective is promoting the productivity of the agricultural sector.

Concerns about a conflict of interest in farm animal welfare regulation making

Some participants expressed concern about a conflict of interest in the arrangements for animal welfare regulation in Australia. Animals Australia stated that:

> … there is a serious misalignment between the regulations and the expectations of the community in this regard. The root of this 'misalignment' lies in the inherent and untenable conflict of interest that exists within both the Commonwealth and state/territory Departments responsible for agriculture — whereby the department charged with maximising the interests of producers is in most cases the same department charged with looking after the animal welfare portfolio. (sub. 53, pp. 1)

Concerns about conflicts of interest are also expressed in the animal law literature. McEwen (2011, p. 3) (from the Barristers Animal Welfare Panel), for example, contends that federal and state departments of agriculture (as part of their involvement in the standard and guideline setting process) are 'standard bearers' of producer interests and that their conflict of interest in regulating animal welfare is patent.

There is the *potential* for a conflict of interest to arise where policy and regulatory objectives conflict. Animal welfare may be of secondary importance where the primary objective of the agency responsible for livestock welfare is to promote a productive and profitable agricultural sector.

Goodfellow (2016) looked at the perceived conflict of interest of state and federal departments of agriculture in administering animal welfare law and argued that measureable economic goals associated with productive and profitable primary industries are prioritised over the more elusive, less determinate public interest animal welfare test. Overrepresentation of industry interests in the standards setting process, industry influence over development of animal welfare science, and inadequate compliance and enforcement were considered to be symptoms of this conflict.

In contrast, a 2015 review of the administration of the *Animal Welfare Act 2002* (WA) was strongly of the view that the Minister for Agriculture and Food, assisted by the Department of Agriculture and Food, should remain responsible for administering and enforcing the Act (Easton et al. 2015). To address any actual or perceived conflict of interest, the review recommended that the department (and the RSPCA, which also has enforcement functions) ensure that inspection functions be separated from operational areas within the organisations.

Representing the interests of the industry that a government department is tasked with addressing is not of itself a concern, and indeed is consistent with its objective. However, issues may arise when that department is also responsible for implementing a regulation that has broader community interests that may conflict with those of the industry.

Another area of concern relates to animal welfare science. Animals Australia claimed that there is 'a serious degree of bias in the science presented during the process of standards setting' (sub. 53, p. 6) and referred to a research paper from the University of Queensland

(by Phillips and Petherick (2015)) that identified instances where research conclusions appeared unfounded based on the evidence.

One of the examples in the paper was a critique of research undertaken on the welfare effects of time-off feed for bobby calves during transport (bobby calves are surplus dairy calves, usually male, that are slaughtered within a few days of birth). The research concluded that 30 hours for time-off feed is defensible as an outer 'legal' limit. Phillips and Petherick (2015) claimed that this observation was made on the basis that most of the measures were within reference ranges, even though plasma glucose concentrations for some calves were reduced to below the lower limit of the reference range at 30 hours. Further, no direct measures of stress (e.g. cortisol) were considered in the research (Phillips and Petherick 2015).

Animals Australia (sub. 53) also claimed that the research was based on a sample of 60 calves from a single well-run farm, where the operators were aware of the study and the need to provide adequate colostrum, good shelter and accommodation and feed prior to the study. Industries involved in the bobby calf supply chain have subsequently agreed to implement a national industry standard for time-off feed of 30 hours for calves aged between 5 and 30 days being transported without mothers.

The 2013 review of the standards and guidelines development process also noted that there were large gaps in the scientific literature on animal welfare (but did not point to specific examples) and suggested that resources needed to be invested in further research. It stated that stakeholders differed strongly on whether the appropriate science was being used in the development of the standards and that often — but not exclusively — conflict arose where there was a lack of science based literature to support claims.

There is some uncertainty about the concept and measurement of animal welfare within the scientific community. The Animal Welfare Science Centre notes that scientists' views differ on how animal welfare should be measured or judged, with three prominent concepts of animal welfare in the literature. The welfare of animals is judged on the basis of:

- how well the animal is performing from a biological functioning perspective
- affective states, such as suffering, pain and other feelings or emotions
- the expression of normal or 'natural' behaviours.

The differences in concepts of animal welfare within science lead to differences in the methodology used by scientists to assess animal welfare under different husbandry or housing practices (Barnett and Hemsworth 2009). A research program to further understanding of the relationships between these concepts and methodologies is being conducted by the Animal Welfare Science Centre (2016).

5.5 Improving the effectiveness of farm animal welfare regulation

There are three areas where farm animal welfare regulation could be improved.

- The objective of the national standards and guidelines needs to be clearer.
- Standards and guidelines should be evidence-based, drawing on independent and credible evidence on animal welfare science and research on community views of animal welfare. This evidence should also be used in RIS processes.
- There needs to be more independence in the standards development process so that outcomes are not overly influenced by the views of any one group, such as industry or animal welfare or rights groups. Judgments made to balance conflicting considerations should be transparent and apply rigorous scientific principles. Surveys of community expectations for animal welfare should be statistically robust and transparent.

The Commission considered three options for improving animal welfare regulations:

- establishing an independent animal welfare science and community ethics advisory body to provide independent advice on animal welfare science, and community values research aimed at establishing community views and values for animal welfare. (This option would not involve any other changes to the institutional arrangements described above for developing the standards and guidelines.)
- creating an independent animal welfare body at the Australian government level — the body would be responsible for the development of national standards and guidelines, including the management of all inputs to the process
- the Australian Government take responsibility for livestock welfare regulation.

These options are not mutually exclusive. The merits and feasibility of each option are discussed below.

An independent animal welfare science and community ethics advisory body

Scientific evidence and community expectations are critical to decisions about animal welfare. They need to be embedded in the process for developing standards and guidelines. Option one is to establish an independent animal welfare science and community ethics advisory body (or two separate bodies) to build a better evidence base on the effects of various animal management practices and on what community expectations are in the area of animal welfare. The advisory body could:

- review the existing scientific research on farm animal welfare (and undertake or commission additional research where knowledge gaps are identified)
- provide scientifically-based information to the community about best-practice livestock farm animal husbandry practices and contemporary animal welfare science — well

informed members of the community will be better able to express a view on the value they place on animal welfare

- review the existing literature on community views, and manage consultation processes (including, for example, public attitudes surveys) aimed at rigorously determining community views and values for livestock welfare. A major challenge in this area is to ensure that people's views about welfare take into account their willingness to pay for it, and that their views are based on accurate information on the actual, rather than perceived, welfare impacts of farming practices
- provide advice to the standards and guidelines project manager (as part of the project manager's role in managing the RIS assessment) and resolve conflicts to determine which scientific literature is most applicable to the relevant standard
- coordinate research and data collection across jurisdictions.

Because there is some uncertainty about the science of animal welfare, policy makers need credible information about the extent of scientific uncertainty. And, because there are trade-offs associated with achieving different animal welfare outcomes, it is important to know how the community values different outcomes. Building this knowledge base would be the role of the community ethics component of the body.

Further, there are synergies between animal welfare science and community ethics. Animal welfare issues may emerge from public concern following evidence of mistreatment or use of certain production practices, and science can validate whether such public perceptions are justified. Alternatively, animal welfare issues may originate from the findings of animal welfare scientists, with the community later validating the importance of the issue as it becomes better understood.

While public consultation is essential for a rigorous RIS process, consultation through submissions is unlikely to be sufficient to balance the sharp differences in views of stakeholders who are likely to engage in the RIS process for developing standards and guidelines. In this case, more participatory consultation and evidence gathering approaches are needed to understand what is generally acceptable to the community. This could include public forums and community and consumer surveys.

The science and community ethics body would need to be made up of a number of experts, including in the fields of animal welfare science, consumer behaviour and social science research. It would also need to be sufficiently resourced so that it could commission research where gaps in the scientific and social science literature are identified. Expertise in public consultation, including survey design, would also be required.

In a submission to this inquiry, Professors Paul Hemsworth and Grahame Coleman from the Animal Welfare Science Centre (sub. 87) recommended that an independent, expert and well-respected advisory committee be established to provide factual advice to the community and major stakeholders on science, philosophy and practices around food and fibre production (including animal welfare, environmental and food safety issues). This

step was considered necessary for achieving a well-informed community and to facilitate rational discussions around food and fibre.

The Farm Animal Welfare Committee in the United Kingdom is an example of a body that was established to provide independent advice (including scientific advice) and recommendations to government on the welfare of farmed animals and advice on any legislative (or other changes) that might be considered to improve standards of animal welfare (FAWC 2016). In Australia, state and territory governments also have animal welfare advisory committees to provide advice on animal welfare matters. The governance structure of the committees vary by jurisdiction and include statutory bodies as well as non-statutory committees and offices.

An advisory body, however, is unlikely to address concerns about a conflict of interest in project management and decision-making for standards and guidelines. An advisory body providing independent scientific and ethical information would not guarantee that such information would be appropriately balanced against economic considerations — principally, the effects on industry from different welfare options. These trade-offs are generally considered within a RIS assessment, which aims to identify the option that provides the highest net benefits to the community as a whole, balancing economic and social considerations. The value of independent and credible animal welfare science and research on community ethics will be undermined if the RIS process is not performed rigorously and if final decisions are not made transparently and in the interests of the community as a whole.

The body could also be tasked with developing national standards and guidelines

The independent animal welfare advisory body could also be given responsibility for developing farm animal welfare standards and guidelines. It would need to be clear that its objective would be to balance the benefits of animal welfare outcomes against the costs of achieving those outcomes, with the ultimate aim of providing net benefits to the community as a whole.

The proposal to establish an independent animal welfare body at the Australian government level is not a new idea. In June 2015, the Australian Greens introduced a Bill to establish an independent office of animal welfare. The Bill (and subsequent proposed amendments) proposed that an independent statutory body, supported by an advisory committee, be established. The proposed advisory committee was to have responsibility (among other things) for commissioning independent animal welfare science to support the development of national standards and guidelines (box 5.8).

In July 2013, the Australian Government also planned to establish an independent office of animal welfare and an inspector general for animal welfare. In October 2013, following a change of government, the Minister for Agriculture announced that the government would not proceed with the establishment of the independent office.

Animals Australia (sub. 53) also suggested that an independent office of animal welfare be established to monitor, investigate and make recommendations to government on matters impacting animal welfare across all areas of animal use (not only farm animals). World Animal Protection also recently recommended an independent office of animal welfare:

> The model that would most efficiently and effectively achieve nationally consistent animal welfare policy and legislation in Australia is an Independent Office of Animal Welfare (IOAW); a statutory independent body with a remit and timetable to review and consult on standards to progress animal welfare. (2016, p. 21)

Box 5.8 Proposal for an independent office of animal welfare

In June 2015, the Australian Greens introduced the Voice for Animals (Independent Office of Animal Welfare) Bill 2015 (Cwlth) in the Senate. The intention was to create an Office of Animal Welfare (OAW) to remove the perceived conflict of interest in the Minister for Agriculture's dual roles of promoting animal production industries and regulating animal welfare. The key features of the Bill (and subsequent proposed amendments to the Bill) were:

- to establish an independent statutory body — the OAW — to assume responsibility, through a CEO, for a range of animal welfare functions, including coordinating the Australian Animal Welfare Strategy (in addition to advising on Commonwealth animal welfare matters), and the development of the national livestock welfare standards and guidelines
- to establish an OAW Advisory Committee to advise the CEO from the OAW, with the advisory committee made up of a specified number of representatives of non-government animal welfare organisations, consumer groups, scientists and ethicists specialising in animal welfare issues, the Department of Agriculture, and industry representatives (no more than 50 per cent of members)
- that the OAW and its advisory committee be responsible for commissioning independent scientific research into specific animal protection areas that may be used in the standard setting process
- that the OAW sit outside the Department of Agriculture, and within the Attorney-General's Department, under the responsibility of the Attorney General.

Other elements of the Bill proposed the development of a nationally coordinated repository of all prosecution outcomes from agencies involved in animal protection and that the OAW have investigation functions.

Source: Senate Rural and Regional Affairs and Transport Legislation Committee (2015a).

An independent animal welfare body could take a number of forms. It could be established as a statutory body (similar to the approach that is used in New Zealand to develop animal welfare codes (box 5.9)).

Alternatively, the body could be established as an office within a department, as is the case with the Office of the Gene Technology Regulator, which resides within the Department of Health (chapter 6).

Box 5.9 New Zealand National Animal Welfare Advisory Committee

The National Animal Welfare Advisory Committee is an independent statutory committee established under New Zealand's *Animal Welfare Act 1999* to provide independent advice on animal welfare to the Minister for Primary Industries, including in relation to the welfare of animals in New Zealand, research needs, codes of welfare, and legislative proposals. Codes of welfare form part of the Act, and set minimum standards of care and management of animals as well as recommend best practice above the minimum standards. Evidence of failure to meet minimum standards in a code may be used to support prosecution under the Animal Welfare Act. Livestock welfare codes relate to: dairy cattle, layer hens, meat chickens, pigs, sheep and cattle, commercial slaughter of animals, and transport of animals.

The structure of the Animal Welfare Advisory Committee

The committee is made up of a chairperson, the chairperson of the National Animal Ethics Advisory Committee, and up to nine other members. Members are chosen for their expertise, knowledge and experience based on criteria set out in the Act. Current members have backgrounds in veterinary science and epidemiology; accountancy; the RNZSPCA; corporate governance; agricultural economics; farming; and animal science.

Operation of the committee and guidelines on its operation

In 2015, the committee focused on eight priority areas, including to: advise the Minister on options for addressing farrowing crates in the code and/or regulations; recommend a code of welfare amendment for dairy cattle to the Minister; develop a position on shelter and/or recommend regulations to maintain animal welfare in pastorally farmed livestock.

The Committee publishes guidelines on how it operates. This includes a guideline on how society's ethical values, technical viewpoints and public opinions are taken into account. The guideline states that there are three relevant dimensions in this regard. The first is to consider ethical values taking into account the evolution of attitudes towards animals and their care. The second relates to technical views on the physical, health and behavioural needs of animals and how they may be met. Technical views evolve over time partly in response to scientific knowledge and technology. The third relates to society's ethical values versus public opinion. The guideline makes a distinction between ethical values and current public opinion, and states that public opinion may or may not be a good measure of a change in society's ethical values. Ethical values relate to the general thought in New Zealand society on what is or is not considered to be acceptable ways of caring for and managing animals.

The Committee states that it will reach its own decision on a draft code and will not formulate codes by following international trends, industry demands or public opinion. Its 'obligation is to work to improve animal welfare by rigorous evaluation of relevant science, practical experience and good practice first, with economics, international trends and public ethical concerns modulating that information. Economic considerations may constrain the speed of implementation of a change the Committee desires, but cannot prevent it' (NAWAC 2011, p. 1).

Source: New Zealand Ministry for Primary Industries (2016).

The benefits of establishing an independent body are that it would:

- provide greater independence in the standard development process
- address concerns about potential conflicts of interest, particularly if the body were to sit at arm's length from the Department of Agriculture and Water Resources (DAWR)

- enable trade-offs between competing interests and objectives to be made more independently.

The main costs associated with establishing an independent body are the administrative costs of operation. There is also the potential that in only having responsibility for setting the standards and guidelines, the body will not be able to address inconsistency in the implementation (and enforcement) of the standards by state and territory governments.

Providing the body with a clear statement of objectives would help ensure that standards and guidelines are set with the ultimate objective of providing net benefits to the community as a whole. The body could be tasked with prioritising issues and focusing on the development of standards and guidelines in areas where there is significant community concern that market forces and industry incentives are insufficient to achieve a level of welfare that is generally acceptable to the community.

To be effective, the body would need to be skills-based and would comprise experts in the fields of animal and veterinary science, ethics, agricultural economics, consumer behaviour, animal welfare, and commercial livestock practice. It is essential that members have no undeclared conflicts of interest.

Consistent with option one above, the body would also include an animal science and community ethics advisory committee with clear and effective processes in place for assessing (to the extent possible) community values for different livestock welfare outcomes. The body would use this information to balance economic and social considerations and provide information to the community and the industry on best-practice animal husbandry practices. Where there are conflicts between productivity improvements and animal welfare, the body should balance these in a way that achieves net benefits to the community as a whole.

An important limitation of this option is that it could still be subject to inconsistent implementation of the standards by state and territory governments. Also, if the body were to sit outside DAWR, there could be some loss of livestock welfare expertise and synergies with the agriculture portfolio's other areas of responsibility, such as biosecurity and advances in livestock industry practices.

There will also be administrative costs associated with an independent body, so its funding arrangements would need to be resolved. That said, government funding is already allocated to a number of farm animal welfare advisory, research and regulatory activities, some of which may no longer be required if an independent body is established. For example, the current standards and guidelines development process is funded on a one-third-each basis by the Australian Government, state and territory governments, and relevant industry groups. And animal welfare advisory bodies have been established in most states and territories. Some government funding is also allocated for farm animal welfare research (for example, through rural research and development corporations). A well-designed independent body need not be significantly more expensive than the current

arrangements, and could deliver cost savings over time by providing greater clarity of farm animal welfare issues.

Australian Government responsibility for farm animal welfare

The third option is the Australian Government taking responsibility for *all* aspects of the regulation of farm animal welfare. The key difference between this approach and the options outlined above is that the Australian Government would design and implement the regulations (which overcomes the problem of inconsistent implementation of standards by state and territory governments) and enforce the national arrangements.

Under this option, producers would only have to comply with one set of arrangements. Consumers and the community more broadly would also benefit from knowing that agricultural products in Australia are produced with the same level of, and compliance with, welfare standards. However, Australian government responsibility for monitoring and enforcement activities is likely to be less efficient than state and territory monitoring and enforcement. This is because states and territories are able to shift monitoring and enforcement resources between various related functions (such as animal health, biosecurity and wild animal control) as circumstances change. State and territory governments also have a better understanding of the issues affecting their jurisdiction and agricultural sectors.

That said, a nationally consistent enforcement approach would not necessarily require Australian Government officers. States and territories (and local government where relevant) could retain farm animal welfare enforcement and monitoring functions based on a national approach. This would be similar to food regulation in Australia, where Food Standards Australia New Zealand (a statutory body) is responsible for the standards and an intergovernmental agreement between the Commonwealth and states and territories establishes that states and territories adopt and enforce these standards (chapter 9).

A number of participants suggested that the Australian Government should be made responsible for farm animal welfare. The Law Society of South Australia said:

> … only the Commonwealth Government has the resources needed to fund national animal welfare standards and this, coupled with a national statutory authority to enforce such standards (save those subject to State jurisdiction such as companion animals owned by individuals) would be the best and most effective way of proceeding to appropriately regulate the area.
>
> A similar case was made for the protections of the environment with the creation of the *Environment Protection and Biodiversity Conservation Act 1999*. It is arguable that the power to make laws that govern animal welfare at the Federal level can be derived from, *inter alia*, the trade and commerce power or the Corporations power. (sub. 44, p. 11)

The Australian Chicken Meat Federation also said:

> The ACMF believes that, not only is the current state-based approach inefficient, but that there needs to be strong national leadership in this particular area. For this reason, we strongly favour

> the concept of regulatory responsibility for domestic production animal welfare reverting to the Commonwealth Government, rather than being regulated at a jurisdictional level (sub. 40, p. 6).

The Australian Chicken Meat Federation further stated that, in the absence of Australian government responsibility for regulation of livestock welfare, that it supported strong national leadership, and nationally consistent legislation with respect to animal welfare. The Australian Chicken Growers' Council (sub. 51) expressed a similar view.

The South Australian Government also commented that:

> The current regulatory system would benefit from greater leadership by the Australian Government in steering animal welfare policy and legislation beyond livestock export and quarantine. (sub. 57, p. 6)

The AFI (2015) also proposed the establishment of national farm animal welfare legislation, supported by a farm animal welfare advisory council to provide advice and recommendations to government (including in relation to national livestock standards). The legislation would also establish a national enforcement system (box 5.10).

There is scope for greater rigour and balance in the process of developing national farm animal welfare standards and guidelines. And importantly, for science and (soundly elicited) community values and expectations to play a more prominent role. Without reform, there is a risk that the agricultural sector and the Australian community will continue to face a patchwork of different regulatory arrangements across jurisdictions that do not rigorously balance economic and social considerations.

An independent body to develop national standards and guidelines

On balance, the Commission considers that the most effective approach would be to establish an independent body with responsibility for developing national standards and guidelines (option two). The independent body would be responsible for managing the RIS process, informed by independent and rigorous science on animal welfare and community values. Industry and animal welfare organisations would provide input through the RIS and other public consultation processes. The standards and guidelines developed by the independent body would be implemented by state and territory governments (with little or no variation unless required to meet clearly defined local circumstances). Monitoring and enforcement functions would remain with state and territory and local governments, although there is scope to improve these arrangements (discussed in the following section).

Box 5.10 **Australian Farm Institute's proposal for national legislation**

The Australian Farm Institute described the current farm animal welfare policy system in Australia as:

> … out-dated, unwieldy, and unable to address urgent emerging challenges effectively. … standards are being established in different ways in different production sectors, and they also differ among states, and it seems that decisions which impact on farm animal welfare are being made by people without appropriate education and background. (Potard 2015, p. 74).

It proposed national legislation to replace the existing fragmented state legislation. The proposed 'National Farm Animal Welfare Act' would focus on farm animal welfare and would:

- outline the guiding principles for farm animal welfare consistent with international standards
- set up a process for writing and updating the standards and guidelines (to be applied consistently across states and across different farm sectors)
- establish an advisory council, relevant committees and implement an enforcement system based on national standards and guidelines.

The proposed independent farm animal advisory council would have the role of scrutinising and formally recommending farm animal welfare standards and guidelines to the government for adoption, and overseeing the revision of them as new information becomes available. The importance of having a council independent of the Department of Agriculture was noted, due to the complexity of some of the issues associated with farm animal welfare.

The Institute proposed that two advisory committees support the council — a scientific advisory committee (to prepare a review of the latest scientific information related to the welfare of the animal(s) affected by the standard being reviewed) and an ethics advisory committee.

Source: Potard (2015).

In addition to its role in domestic farm animal welfare regulation, the body could also be responsible for regularly providing an independent assessment of the effectiveness of the monitoring and enforcement of the standards by state and territory governments (section 5.5), and the live export regulatory system (section 5.6).

DRAFT RECOMMENDATION 5.1

The Australian Government should take responsibility for ensuring that scientific principles guide the development of farm animal welfare standards. To do this, an independent body tasked with developing national standards and guidelines for farm animal welfare should be established.

The body should be responsible for determining if new standards are required and, if so, for managing the regulatory impact assessment process for the proposed standards. It should include an animal science and community ethics advisory committee to provide independent evidence on animal welfare science and research on community values.

INFORMATION REQUEST 5.1

The Commission is seeking feedback on:

- *the most effective governance structure for an independent body tasked with assessing and developing standards and guidelines for farm animal welfare*
- *what the body's responsibilities should include (and whether it should make decisions or recommendations and if the latter, to whom)*
- *what processes the body should use to inform and gauge community values on farm animal welfare*
- *how such a body should be funded.*

An outcomes-based approach for national standards?

A more outcomes-based approach to the development of national standards and guidelines may be able to play a greater role in farm animal welfare regulation than prescriptive standards. An outcomes-based approach could focus on ways of measuring livestock welfare, and could be used for measuring compliance. Grandin (2014), for example, identified a number of numerical scores that could be used to determine whether handling and stunning practices during the slaughter process were improving or deteriorating. The scores included the percentage of animals that are rendered insensible with one captive bolt or gunshot, vocalise and/or fall during handling, and are moved with electric prods.

The OIE Terrestrial Animal Health Code (article 7.3.8) encourages the use of performance standards. For example, it states that for the loading of animals, 'performance standards should be established in which numerical scoring is used to evaluate the use of such instruments [goads and other aids], and to measure the percentage of animals moved with an electric instrument and the percentage of animals slipping or falling as a result of their usage'.

Outcomes-based regulation gives livestock producers flexibility in terms of the production process and practices they use (such as housing systems and livestock handling aids) to achieve welfare objectives. However, this approach is less appropriate where outcomes are not easily observed and measured, or where there is only one way of achieving a regulatory objective. Governments can also choose to prohibit certain practices where these are considered unacceptable to the general community. Some farm businesses may also sometimes prefer prescriptive arrangements because they provide greater certainty about their regulatory obligations.

The role of public funding to improve farm animal welfare

Under the options outlined above, relevant governments could retain responsibility for providing any public funding to support the transition to different welfare standards (where

these are assessed as providing net benefits to the community). Public funding could be provided in a number of ways, including through support for scientific research on animal welfare (such as through research grants, and funding through Rural Research and Development Corporations (chapter 6)). Producers could also be supported to meet one-off costs associated with a transition to a new production practice. For example, in 2013, the Tasmanian Government provided $500 000 to assist producers in converting their infrastructure and to transition away from the use of sow stalls during gestation (Tasmanian Government 2013). However, subsidies to producers can disadvantage producers who have already invested to achieve higher animal welfare outcomes. They can also discourage further voluntary development of production methods that achieve higher welfare outcomes, and which can be marketed to obtain a higher price.[13]

Monitoring and enforcement of livestock welfare regulation

Effective regulation includes incentives for regulated entities to comply with regulation. No matter how well designed, regulations will not achieve their objective if those that are regulated do not comply or if the standards are not able to be effectively enforced. The effectiveness of monitoring and enforcement arrangements is influenced by whether non-compliance is able to be detected and addressed, which is in turn influenced by the resources and skill sets available to regulators.

Transparent and effective monitoring and enforcement functions are needed to assure the community that regulatory objectives are being achieved. But aiming for 100 per cent compliance is unrealistic as there are costs associated with monitoring and enforcement.

Publicly available information on the enforcement activities of state and territory government agencies responsible for farm animal welfare compliance functions is limited. This makes it difficult to assess the extent of compliance with welfare standards. State and territory governments generally share responsibility for livestock welfare inspection activities with the RSPCA, although the RSPCA's responsibility is limited with respect to livestock in some instances (box 5.11).

Concerns were raised about the level of monitoring and enforcement of farm animal welfare standards. Vegan Australia (sub. 25) said that state and territory enforcement agencies fail to enforce animal welfare regulations and even where regulation is enforced, it is very rare for a perpetrator to be punished appropriately.

[13] Harvey and Hubbard (2013) proposed the novel idea of a consumption subsidy for products that involve higher animal welfare outcomes. However, it is hard to envisage how such a subsidy would be calibrated and implemented in practice.

Box 5.11 Responsibility for enforcement of farm animal welfare regulation

Responsibility for enforcement and inspection activities in relation to livestock welfare is generally shared between state and territory government agencies and the RSPCA. For example:

- in Queensland and Victoria, the RSPCA's role relates to companion animals and non-commercial farm animal welfare issues (Agriculture Victoria 2016b; Queensland Government 2013a)
- in Western Australia, the Department of Agriculture and Forestry and the RSPCA are both responsible for enforcement of farm animal welfare regulations. The RSPCA is responsible for enforcement for both companion and farm animals, including 'level three' (serious) commercial livestock matters. Funding to the RSPCA from the WA Government is for enforcement of companion animal welfare issues only — this funding does not relate to inspections for animal cruelty cases relating to farm animals (RSPCA Western Australia 2015). The Western Australian Pork Producers Association (sub. 24) said it supported the Department of Agriculture and Forestry in ensuring compliance with the *Animal Welfare Act 2002* (WA) as it applies to production animals
- in New South Wales, the Department of Primary Industries is responsible for administering the *Prevention of Cruelty to Animals Act 1979* (NSW), but officers of the department do not have powers of enforcement (NSW DPI 2016b). The enforcement agencies are the RSPCA, the Animal Welfare League of NSW and the NSW Police
- in Tasmania, inspections are conducted by the Department of Primary Industries, Parks, Water and Environment. RSPCA animal welfare officers are also authorised to inspect premises where animals are kept for commercial purposes. Unannounced routine inspections occur for intensive pig farms and poultry farms (TDPIPWE 2016a).

Animals Australia (sub. 53) suggested that in the main, the system of enforcement is reliant on complaints. But as observed by the Law Society of South Australia (sub. 44), complaints are likely to be limited for intensive farming facilities as animals and operations are usually in closed buildings or in remote areas, making it difficult for members of the public to observe animal farming practices. Animals Australia further stated that:

> A series of requests by Animals Australia to state government animal welfare enforcement officers to request details of any 'routine' or systematic compliance initiatives recently found it varied significantly between the states — in NSW and Victoria for example there were no current routine compliance monitoring systems related to animal welfare in place (other than for abattoirs), and only in Tasmania was 'unannounced' inspections the norm. (sub. 53, p. 12)

Animals Australia further stated that 'discretion to prosecute chiefly resides with departments of agriculture/primary industry, which take into account factors relevant to their role as facilitators of agribusiness'(sub. 53, p. 14). Similarly, RSPCA Australia (sub. 31) considered that animal welfare regulations are not appropriately enforced. It suggested that the most significant problem with enforcement is lack of funding. Also, funding from the states to the RSPCAs (through annual grants) typically accounts for a

small percentage of the various RSPCAs' actual enforcement expenditure. The Law Society of South Australia (sub. 44) expressed a similar view.

A challenge for animal welfare enforcement is that there are limited resources available. The large number of reported animal welfare incidents relating to companion animals limit the available resources for compliance activities in farming, particularly as some farming occurs in vast geographical rural areas. That said, sufficient resources should be devoted to ensuring compliance that is proportionate with regulatory objectives.

Commenting on the enforcement of livestock regulation, the Australian Veterinary Association said:

> State government agencies do not appear to be adequately resourced to effectively administer animal welfare legislation and recent breaches have highlighted the need for better animal welfare regulation and enforcement. A section of the public has lost its confidence in the power of government and non-government agencies to adequately enforce existing legal protections for animals. Some animal welfare advocates have felt compelled to take matters into their own hands. This situation is undesirable for a number of reasons, not the least of which is the potential for serious breaches in biosecurity protocols and risks to the animals themselves from uncontrolled and unauthorised contact with animal welfare advocates. (2015, p. 3)

The 2015 review of the administration of the *Animal Welfare Act 2002* (WA) in Western Australia found that the Department of Agriculture and Food was 'under-resourced to deliver a level of service to meet community and industry expectations' (Easton et al. 2015, p. 3). The review found that livestock welfare investigations took priority over inspections, and that investigations were reactive not proactive due to resource constraints. The review recommended that funding to the department be increased and that a process be put in place for annual reporting of animal welfare activity by inspectors. The WA Government supported the recommendations (Baston 2015).

Effective enforcement requires clearly defined and well understood criteria for breaches of farm animal welfare regulations and standards. The AFI (2015) claims that most states' current enforcement frameworks are inherited from the past, when the regulators' main objective was to police cruel behaviour by individuals towards animals. The AFI also considered that the current enforcement system (through prevention of cruelty legislation) does not specialise in farm animal welfare issues, as reflected in most of the jurisprudence.

As noted above, under current state and territory animal cruelty legislation, it is not a legal requirement to comply with all codes of practice (unless the code is mandatory), although compliance with a code provides a defence to a person charged under relevant animal cruelty legislation. The AFI (2015) suggested that most courts do not have a clear process to assess issues of compliance with farm animal welfare standards and how this differs from cruelty. Similarly, Ellis (2010) considered that the exemption of commercial livestock from state animal welfare Acts means that there is an absence of Australian legal authority regarding words such as 'unnecessary' in relation to animal cruelty provisions as they apply to livestock. McEwen (2011) raised similar concerns.

Industry-led quality assurance systems as a complement to regulation

Industry quality assurance schemes can complement farm animal welfare regulation, for example, where the scheme puts in place requirements that are higher than the minimum standards prescribed by law. Where a quality assurance scheme has a clear and transparent compliance framework and independent trained auditors, it could be used as a complement to state and territory monitoring arrangements. Where the quality assurance system is developed by a national industry group, it could also help to provide consistency where there are different regulatory requirements at the state and territory level.

An example is the Australian Pork Industry Quality Assurance program for pig producers. This program has been approved as part of a co-regulatory arrangement in Victoria under the *Livestock Management Act 2010* (Vic). The Australian Livestock Processing Industry Animal Welfare Certification System is another example of an industry quality assurance program. This system uses independent audits to demonstrate compliance with animal welfare standards established by the Australian Meat Industry Council.

In principle, co-regulation offers potential advantages over traditional regulation including greater flexibility and adaptability, lower compliance and administrative costs, ability to address industry-specific and consumer issues directly, and quick and lower-cost complaints handling. However, it also has limitations. Adequate protection must be in place to ensure that the arrangement is not captured by the industry for its own, rather than the community, benefit (Hepburn 2006). Animals Australia also suggested that a co-regulatory model for animal welfare 'would require adequate accountability and oversight safeguards to ensure legitimacy, including mandatory reporting by auditors of serious welfare issues'(sub. 53, p. 14). It went on to say that 'there are already legitimate community and welfare group concerns … that industry QA schemes are "in-house" and regularly put the needs of industry above the welfare needs of individual animals'.

State and territory governments would need to be sure that the industry quality assurance scheme aligns (at a minimum) with the relevant farm animal welfare standards established in law. External (independent) monitoring and auditing would be required to ensure that the scheme is achieving its objectives.

Other industry-led initiatives may also help to improve confidence in the community that animal welfare standards are being maintained. For example, some abattoirs in Australia have installed closed circuit cameras to monitor animal welfare and worker safety. Monitoring of video footage by third-party auditors may further increase community confidence. And broadcasting video footage (for example, Ecoeggs' 'ChookCam') provides information to consumers and the community about the production practices used by producers. The use of drones could also reduce the costs associated with monitoring animal welfare outcomes on large farms (chapter 6).

Third parties along the livestock supply chain could also play a role in helping to ensure the compliance of welfare standards. An example could be a requirement that stock agents or managers of livestock saleyards report any breaches of welfare standards to the relevant

regulatory agency (which could be a local government as, in some cases, saleyards are owned and operated by councils, which make local laws applicable to livestock welfare at saleyards) (Harding and Rivers 2015).

Greater transparency of monitoring and enforcement activities

Overall, the Commission considers that more transparent and effective monitoring and enforcement arrangements would help to increase confidence within the community that farm animal welfare standards are being met. Transparency could be improved with annual reporting by relevant regulators of the compliance activities they undertake, including routine unannounced inspections.

Targeting monitoring and enforcement activities to areas of highest risk for farm animal welfare, and to areas where there is significant community concern, could improve the overall effectiveness of monitoring and enforcement arrangements, and help prioritise use of limited resources. Improvements could also be made by recognising industry quality assurance schemes that (at a minimum) comply with mandatory farm animal welfare standards and involve transparent compliance arrangements using independent auditing.

To manage perceived (and potential) conflicts of interest, there should be independence between farm animal policy functions and regulatory enforcement functions — both within relevant departments of agriculture and primary industries as well as the RSPCA.

Assessment and reporting on monitoring and enforcement activities by the independent body (as discussed in the preceding section) would also help to increase transparency for the community, and help to identify issues in the implementation of farm animal welfare standards.

DRAFT RECOMMENDATION 5.2

State and territory governments should review their monitoring and enforcement functions for farm animal welfare and make necessary changes so that:

- there is separation between agriculture policy matters and farm animal welfare monitoring and enforcement functions
- a transparent process is in place for publicly reporting on monitoring and enforcement activities
- adequate resourcing is available to support an effective discharge of monitoring and enforcement activities.

State and territory governments should also consider recognising industry quality assurance schemes as a means of achieving compliance with farm animal welfare standards where the scheme seeks to ensure compliance (at a minimum) with standards in law, and involves independent and transparent auditing arrangements.

5.6 Live export regulation

Australia has a two-part system for regulating animal welfare for live exports.

- The Australian Standards for the Export of Livestock regulate the welfare of animals being prepared for live exports in Australia and during the voyage to the importing country. These standards were introduced following the 2003 Cormo Express incident, which involved the rejection of a boatload of Australian sheep by Saudi Arabia, resulting in the vessel and sheep remaining in limbo for almost three months.
- The Exporter Supply Chain Assurance System (ESCAS) regulates animal welfare for live exports originating in Australia from arrival in the importing country to slaughter.

The ESCAS is based on four principles:

- animal handling and slaughter in the importing country consistent with OIE animal welfare recommendations
- control through the supply chain by the exporter with all livestock remaining in the supply chain
- traceability through the supply chain to, and including, slaughter
- independent auditing and reporting of the supply chain in the importing country.

The ESCAS was implemented in 2011 following public response to a news report by *Four Corners* on the mistreatment of Australian animals in some Indonesian abattoirs (Four Corners, 30 May 2011). The (then) Minister for Agriculture, Fisheries and Forestry suspended trade to Indonesia of cattle for slaughter. During the suspension, new safeguards for animal welfare — the ESCAS — were designed. Trade to Indonesia resumed in August 2011, under the new ESCAS framework, and the ESCAS has since been expanded to all destination markets for Australian live exports (although Australia has not exported live animals to Saudi Arabia since August 2012 due to Saudi Arabia's concern that the implementation of the ESCAS would impinge upon its sovereignty).

The ESCAS aims to 'ensure that Australian livestock exported for feeder and slaughter purposes are handled in accordance with international animal welfare standards and to provide a mechanism to deal with animal welfare issues when they occur — preventing the need for trade suspensions' (Commonwealth of Australia 2015a, p. 2).

There is support for regulation of Australian live exports

There was general support from participants for the regulation of Australian livestock export supply chains, although there were various suggestions for improvement to the system. Industry and animal welfare and animal rights organisations' views on the trade also differ considerably.

The NSW Farmers' Association expressed support for the ESCAS:

> We recognise that the community response to revelations in the live export industry created a widespread reaction from the public and that regulatory intervention to respond to this level of public reaction was not inappropriate. (sub. 72, p. 26).

And the Australian Livestock Export Corporation (LiveCorp) observed that:

> For exporters and importers, the changes brought about by ESCAS were significant with animal welfare becoming a core part of their businesses. Whereas exporters were a logistics partner in the supply chain until 2011, they have since developed into a provider of animal welfare knowledge and infrastructure and a partner in the monitoring, reporting and enforcement of the regulation.
>
> As a result, the achievements in animal welfare improvements delivered by exporters and their customers have been significant, if not generational (sub. 75, p. 13)

Similarly, the Australian Livestock Exporters' Council (sub. 78) said that ESCAS has achieved its aim of regulating the export of livestock along the supply chain to provide a greater level of assurance of animal welfare. However, both the Australian Livestock Exporters' Council and LiveCorp suggested that the benefits of the system are achieved with significant costs and adjustment for the industry (discussed further below).

A return to the system prior to the introduction of the ESCAS in 2011 was not advocated by participants, although some proposed that live exports be banned (Animals Australia, sub. 53; Vegan Australia, sub. 25). And there have been renewed calls for a ban on live exports following reports of inappropriate handling and slaughter of cattle at ESCAS facilities in Vietnam in June 2016.

A ban on live exports could lead to several outcomes, with different implications for animal welfare. It is conceivable that Australian exports of refrigerated meat could replace live exports over time. However, while Australia has developed a significant trade in meat products, a lack of refrigeration and cold chain facilities, as well as cultural preferences for freshly slaughtered meat, could preclude Australia from servicing all of its export markets with processed meat products (DAWR 2015p), at least in the short to medium term. Accordingly, there is a genuine risk that a ban on live exports from Australia would induce increased livestock exports from countries with lower welfare regulations. So, perversely, a ban on live exports could actually result in poorer animal welfare outcomes.

If not designed and implemented well, any regulatory arrangement that seeks to improve the welfare of Australian animals in export markets could unnecessarily increase the costs of Australian live exports. If these costs cannot be absorbed by exporters or passed through in final prices, there is a risk that buyers could substitute to exports from countries with lower animal welfare regulations.

An important policy question is whether regulatory arrangements can effectively manage the welfare of Australian live exports without imposing costs that lead to a substitution to exports from other countries. That said, if regulation is unable to effectively address the

welfare risks for live exports, then the Australian Government could still decide to prohibit the trade if this aligns with the expectations of the Australian community.

Is the ESCAS meeting its objectives?

The ESCAS was introduced to meet the dual objectives of:

- providing assurances to the Australian community that the welfare of animals exported from Australia is maintained through to the point of slaughter in the importing country
- facilitating the livestock export trade so that exporters can increase market share overseas.

Commenting on the objectives of the ESCAS, LiveCorp said:

> … a significant gap in the current ESCAS regulation is the lack of a clear objective and guidance or principles for decision making/discretions and an overt recognition within the live export laws of the regulator's need to balance legitimate social and economic goals, and how this should be achieved. (sub. 75, p. 23)

LiveCorp also said that without a legislated objective there is a perception that the regulator has primarily drawn its purpose from the discretion allocated to the Secretary under the Export Control (Animals) Order 2004 — which sets out the ESCAS and is made under regulations to the *Export Control Act 1982* (Cwth). However, such an approach provides regulatory flexibility and enables rules to be more easily adapted to changing circumstances. Regulatory guidance can be provided to help provide certainty to livestock exporters about how any regulatory discretion may be used. Indeed, guidance in the form of export advisory notices and guidelines has been developed that outlines the regulatory requirements and compliance strategy underpinning the ESCAS (discussed further below).

Some evidence of improved welfare outcomes for live exports

In a 2015 Australian government review of the ESCAS, exporters and importing countries were reported as saying that the ESCAS had led to greater efficiency in processing animals at slaughter, as well as improved animal welfare outcomes. For example, a Philippines importer was reported as noting that the ESCAS had improved staff knowledge and contributed to the establishment of procedures for feedlot and meat processing facilities (Commonwealth of Australia 2015a).

Animals Australia acknowledged that welfare for Australian live exports has improved following the introduction of the ESCAS (sub. 53, attachment). While retaining its policy position that live exports should be replaced by carcass-only trade, Animals Australia suggested that some Australian exporters are now more proactive in securing improved treatment of exported animals. It referred to Indonesia and the broad implementation of stunning as an important example of this. Between July 2011 to September 2013, it is estimated that about 90 per cent of cattle exported to Indonesia were processed in facilities

that used pre-slaughter stunning (Commonwealth of Australia 2015a). Pre-slaughter stunning was rarely used prior to 2011.

Despite these developments, there are calls for the ESCAS to be strengthened, including through:

- stronger penalties for non-compliance and strengthening of the audit system
- mandatory pre-slaughter stunning and extension of the system to include animals used for breeding purposes.

An independent review of Australia's livestock export trade in 2011 (the Farmer review), found that there would be practical difficulties extending the ESCAS to breeders, and that it would be difficult, costly and intrusive for industry or regulators to maintain a 'line of sight' over the many years that breeders may live. The review also noted that international animal welfare standards allow for slaughter with or without stunning and that there was sensitivity (in some countries) about suggestions that Australia might seek to mandate its own standards overseas. However, it was generally accepted that Australia was seeking to ensure, via commercial arrangements, the welfare of Australian animals in accordance with the OIE standards (Farmer 2011).

Live exporters also raised concerns about the costs of the system and called for reforms to reduce the level of oversight by the regulator, including through reliance on industry quality assurance schemes and codes of conduct (Australian Livestock Exporters' Council, sub. 78; Consolidated Pastoral Company, sub. 71; LiveCorp, sub. 75).

Industry concerns about the costs of the ESCAS

Exporters are required to provide a substantial amount of paperwork to DAWR for the ESCAS, including application documents, contracts or control arrangement documents, and traceability procedures and audit reports (Commonwealth of Australia 2015a).

The Pastoralists and Graziers Association of Western Australia (sub. 70) said that livestock exporters are often confronted with requests for differing levels of detail that vary from official to official and consignment to consignment. As a result, exporters are unable to establish standard operating procedures for the ESCAS.

Analysis conducted for LiveCorp by Ernst & Young estimated the costs associated with the ESCAS to be $22.3 million per annum, which is made up of: administrative costs (69 per cent); substantive compliance costs (27 per cent) and ESCAS charges (4 per cent) — 84 per cent of the substantive compliance costs are estimated to be fixed costs (LiveCorp, sub. 75, attachment 1). However, the report did not address the extent to which these costs represented unnecessary regulatory costs, or whether any costs could be mitigated or avoided (for example, through cost sharing between exporters).

These costs are also substantially higher than previous estimates from DAWR and Meat and Livestock Australia and LiveCorp.

- In 2015, DAWR estimated that the ESCAS had cost about $18 million per year since 2011 — with $12 million of these costs incurred by the live export industry and $6 million by the Australian Government, some of which is cost-recovered from exporters. An additional $5 million in government support was provided over 2011–13 for private investment in supply chain improvements, including infrastructure upgrades and personnel training (Commonwealth of Australia 2015a).
- A study conducted in 2013–14 by Meat and Livestock Australia and LiveCorp, estimated the economic costs from the ESCAS (per head of livestock) to be between $0.77 (for sheep) and $13 (for goats as well as for sheep that are transported by air) (MLA 2014). Based on these estimates and the number of livestock exported in 2013-14, the cost of complying with the ESCAS would be about $13.2 million per year (LiveCorp, sub. 75, attachment).

In an addendum to its report, Ernst & Young suggested several explanations for the differences in the estimates:

- different methodologies (including whether costs were estimated or self-reported)
- the use of different population bases (whether costs were measured per animal or per exporter)
- the fact that some costs of complying with the ESCAS had not been fully realised by the time the earlier studies were undertaken. (LiveCorp, sub. 75, attachment 2).

Reforms to reduce the cost and complexity of the ESCAS

The cost and complexity of the ESCAS was acknowledged in the 2015 ESCAS review, which raised questions about whether the same animal welfare outcomes could be achieved through a simpler, clearer and ultimately more cost-effective system.

Options to improve the system were identified in the review and some reforms have been introduced, including:

- new auditing arrangements that apply a risk-based (low, medium, or high) approach to determining the frequency of audits for facilities in ESCAS supply chains. Facilities with a high risk or a history of poor performance will be subject to an increased number of audits while audits for facilities with good performance may be reduced
- allowing the sharing of audits for the same facility or supply chain
- allowing a standing ESCAS approval process so that exporters do not have to submit an ESCAS application for every consignment (notice of intent to export) (Commonwealth of Australia 2015; DAWR, sub. 50; Joyce 2015).

RSPCA Australia (sub. 31) stated that it was consulted on the reforms and that in each case it expressed concerns about the potential for regulatory oversight of the trade to be reduced. RSPCA Australia stated that any benefits in terms of improving efficiencies in regulatory processes must not come at the expense of reductions in animal welfare and that:

> Net community benefits in this regard must be conceptualised broadly to include satisfying community concerns for animal welfare. (sub. 31, p. 4)

Managing compliance with ESCAS requirements

Australia has no legal basis or authority to conduct compliance activities in export supply chains or slaughter facilities located in export destination countries. Rather, it relies on notifications of breaches from auditors, exporters and third parties. The inability of DAWR to directly observe activities in foreign supply chains and to assess compliance with the ESCAS is the one of the biggest challenges for the regulation of live exports.

Since its inception in August 2011 until the end of May 2016, there have been 98 reported incidents of non-compliance with the ESCAS, involving about 45 000 animals (out of a total of 13.2 million). The number of reported incidents has increased over time — from 5 in 2012 to 43 in 2015 (11 incidents have so far been reported in 2016). About half of the reported breaches have come from animal rights groups, the media or third parties, while the other half have come from exporters themselves, industry reports and audit reports (in one instance) (DAWR, pers. comm., 12 July 2016).

The level of self-reporting by exporters has increased over time, although Animals Australia (sub. 53, attachment) claimed that self-reporting is due to the threat of exposure by animal welfare organisations and that without this threat the level of self-reporting would be much lower. It also claimed that without Animals Australia performing the role of unofficial 'watchdog', breaches of the ESCAS in export markets would have gone undetected, but this role is not sustainable for a charity (Animals Australia, sub. 53, attachment).

The main reason for non-compliance is the movement of animals outside of an approved supply chain. According to DAWR, most instances of non-compliance are due to a loss of control of the supply chain (and hence the animals within the supply chain) without establishing any adverse animal welfare outcomes (Commonwealth of Australia 2015a). The 2015 review of the ESCAS stated that non-compliance with ESCAS was higher for sheep exports, as sheep are not individually identified and are commonly sold for home slaughter in the Middle East — the main market for Australian sheep. (Use of electronic identification of sheep (as suggested by Animals Australia, sub. 53) could be one way of assisting in the identification of Australian sheep that have been removed from an ESCAS approved supply chain). Of the 59 reported incidents up to that point — November 2014 — 22 were identified as resulting in adverse or unknown welfare outcomes, involving up to several thousand animals in one instance.

Regulatory action taken as result of complaints that were upheld include changes to export licence conditions (although there have been no suspensions or cancellation of licences), and additional conditions to an ESCAS approval, including increased auditing in, and reporting from, some markets, and restrictions or suspensions of facilities. No criminal sanctions, such as fines or imprisonment, have been imposed on Australian exporters as a result of non-compliance with the ESCAS.

Additional control and traceability standards and auditing requirements have been applied in some export markets. For example, since October 2015, Australian exporters supplying cattle and buffalo to Vietnam have been required to verify effective implementation of the livestock industry's 'six point plan' to address supply chain leakage in Vietnam. The plan includes criteria for management, monitoring, recording and auditing of control and traceability within ESCAS supply chains and facilities, such as use of working real time CCTV at key control points with remote monitoring and recording, and unrestricted access by the exporter and their representative to all facilities within their supply chain (DAWR 2015h).

However, additional requirements do not guarantee that the relevant welfare standards will be met. As noted above, DAWR is currently investigating allegations of breaches of the ESCAS in supply chains and facilities in Vietnam (where additional requirements are in place). There have been other instances of breaches of the ESCAS in supply chains and facilities that have been audited and approved under the ESCAS, including in Israel and Gaza.

Animals Australia (sub. 53, attachment) called for greater penalties for non-compliance. The 2015 review also suggested that the ESCAS be supported by a system of financial or other sanctions (such as enforceable undertakings), rather than relying on the administrative and criminal (strict liability) sanctions currently available.

A broader range of monitoring, investigation and performance powers to deal with non-compliance (including infringement notices, enforceable undertakings and civil penalties) are currently being considered as part of stage two of the Australian Government's review of agricultural export legislation. Stage two reforms are expected to take place during 2016 and 2017 so that implementation can occur before April 2020 (when the delegated legislation will cease). These reforms are likely to provide a more effective suite of tools to manage instances of non-compliance with the ESCAS. DAWR stated that expanding the range of sanctions will provide effective enforcement tools that can be applied proportionately to a breach or an act of non-compliance (DAWR 2015j).

The independence and competence of auditors

Enforcement of the ESCAS relies on a system of independent audits (box 5.12) and reports from exporters or third parties. The independence and competence of the auditors employed under the ESCAS was questioned by Animals Australia:

> The auditors are selected, paid for, and retained by exporters, and their audit reports are provided to the exporters prior to being submitted to DA. This puts them in the category of second-party audits (at best), and certainly cannot provide the independence of a third-party audit (sub. 53, attachment, p. 3).

Box 5.12 **Auditing under the ESCAS**

There are two main types of auditing requirements under the ESCAS.

- The independent initial audit report is required as part of an exporter's application for an ESCAS approval for a new supply chain and new facilities for existing supply chains.
- The independent performance audit report is provided by the exporter on the performance of the supply chain.

Audits report on an exporter's control of the supply chain, the traceability system, and whether World Organisation for Animal Health recommendations for animal welfare can be (in the case of an initial audit) or have been (for performance audits) met. The frequency of performance audits (annual, half yearly or quarterly) is determined using a risk-based auditing schedule based on the type of facility, its inherent risks and the actions and compliance history of exporters. Exporters may share audit reports to minimise costs, provided each exporter submits an audit report that references their name. Audit reports must be provided to the Department of Agriculture and Water Resources within one month of completion.

Independent auditors must possess the necessary accreditation, qualifications and skills to be accepted as an ESCAS auditor by the Department of Agriculture and Water Resources. The auditing company must have independence, no conflict of interest and possess an appropriate level of competence (through qualifications and expertise) accredited (to an international standard) by an appropriate authority, such as a member of the international body for accreditation of Conformity Assessment Bodies — the International Accreditation Forum. An example of an authority that provides accreditation is the Joint Accreditation System — Australia and New Zealand. The Department requires evidence that the auditing company meets these requirements prior to accepting an independent audit report.

Source: Department of Agriculture and Water Resources (2015d).

There has been an increase in the number of exporters addressing and resolving non-compliance before the audit is submitted to the department. The Australian Government stated that this outcome is in line with the principles of the ESCAS — to detect, manage and prevent non-compliance — and for this reason, there are few audit reports with non-compliance that have not had corrective action taken. But as acknowledged in the 2015 ESCAS review, audits provide an assessment at a single point in time so it is possible that non-compliance occurs outside an auditor's visit (Commonwealth of Australia 2015a).

To be approved as an auditor for the ESCAS, the auditor must have independence, no conflict of interest, and possess an appropriate level of competence (accredited by an appropriate authority). The regulator should satisfy itself that such criteria have been met, and continue to be met, especially where concerns are raised by third-parties about auditor competence or independence.

DAWR could require, as part of its audit policy, that auditors are regularly rotated, or replaced where it is found that auditors are not performing to the standards required by their accreditation. It may also be possible for DAWR to select (and potentially appoint) which third-party auditors or audit companies can be used under the ESCAS, with exporters paying full cost recovery fees for audits (as proposed by Animals Australia (sub. 53, attachment)). However, direct appointment of auditors by the Department could raise issues if importing countries view this as auditing by the Australian Government.

Options to improve the effectiveness and efficiency of the ESCAS

Both LiveCorp (sub. 75) and the Australian Livestock Exporters' Council (sub. 78) proposed reforms to reduce the regulatory burden of the ESCAS (box 5.13). The main concerns underpinning the proposed reforms related to what ALEC defined as:

- lack of clear objective setting for the role, expectations and scope of the operation of the regulator
- failure to define and limit the scope of discretionary powers, allowing for significant regulatory creep
- expectation of infallible performance by exporters
- strict liability and secondary liability for exporter non-compliance
- de facto sanctions applied to exporters where evidence is circumspect or unproven.

Both suggested that many of the above issues could be addressed through primary legislation that clearly articulates the objective of the ESCAS, and outlines the role and powers of the regulator. However, it is unclear if this approach would provide greater benefits than other options that could be implemented in the shorter term to reduce the regulatory burden of the ESCAS. Also, regulatory guidance is already available through export advisory notices and guidelines. For example, DAWR has prepared a number of export advisory notices and guidelines for livestock exporters that outline ESCAS requirements. This includes notices on: risk-based auditing arrangements; standards, requirements, checklists and templates for audits; control and traceability standards; and the ESCAS compliance and investigations strategy, including the regulatory options that may be used (and when) to address non-compliance.

The Commission considers that the greatest scope to reduce the regulatory burden of the ESCAS is through greater cooperation between exporters themselves, including in the

auditing process, and recognition of equivalent regulatory standards in importing countries (discussed below).

Box 5.13 Reforms to the ESCAS proposed by live exporters

Reforms to the ESCAS proposed by LiveCorp and the Australian Livestock Exporters Council can be broadly grouped into the following categories:

- set clear objectives and principles in governing legislation that articulates the critical balance between social and economic objectives of the trade
- entrench the concept of 'reasonableness' rather than the current requirement of absolute compliance
- provide guidance on the use of discretionary powers and ensure that the government's risk appetite for the trade in livestock is set out in transparent and defined legislation
- refocus the Department of Agriculture and Water Resources on substantive matters rather than micro-management
- expeditiously introduce a regulatory pathway to recognise suitably structured welfare conformance and certification programs and/or equivalence in other regulatory jurisdictions
- establish the level of intervention in a recognised program at a systems level
- reform the current approach to non-compliance assessment and enforcement, including the substantive ties to license approvals, particularly for operational matters.

In addition, ALEC suggested that the substantial public good elements of the ESCAS requires more active recognition and support from government and that government investment in the Livestock Global Assurance System provides an opportunity for this to occur.

Sources: ALEC (sub. 78); LiveCorp (sub. 75).

Recognising industry assurance schemes and equivalent regulatory regimes

ALEC (sub. 78) raised concerns about 'micro management' by DAWR, and suggested that there are duplicative auditing processes and ineffective use of independent auditing. However, there is currently scope for duplication of audits between exporters to be reduced through sharing of audit reports. While some exporters have used this option, more extensive use may be limited by commercial factors associated with sharing audit reports.

Another way to reduce duplication of audits is to rely on industry quality assurance programs that involve animal welfare assurance and independent auditing. The Sheepmeat Council of Australia and the Cattle Council of Australia (sub. 88, attachment), for example, suggested that the ESCAS requires simplification with transition to a co-regulatory model.

The Livestock Global Assurance Program (LGAP) is being developed by the live export industry (with funding from Meat and Livestock Australia) with the intention that it could be used by Australian exporters as a means of demonstrating regulatory compliance with the ESCAS. The LGAP is intended to be independent of government but recognised as an

alternative pathway for live export welfare assurance. The main differences between the LGAP and the ESCAS for exporters are claimed to include:

- greater ability for the LGAP to remove audit duplication than under the ESCAS
- better risk management at the facility level (rather than supply chain level) by allowing facility performance to be monitored on an individual and ongoing basis through standardised mechanisms
- responsibility for the day-to-day welfare and management of livestock shared more equitably by the facilities which handle the livestock
- internal audits are used as a standardised risk mitigation tool to better manage what occurs during the time between external audits (or the inter-audit gap)
- while non-conformities carry consequences, the LGAP focuses on continual improvement (Meat and Livestock Australia 2015).

ALEC (sub. 78) stated that the challenge in relation to the LGAP for the Australian Government (if it is implemented by industry) is negotiating the appropriate intersection between the program's independence and the Government's regulatory oversight of the trade. The Commission understands that the LGAP could be accepted as a co-operative auditing arrangement under existing ESCAS arrangements, if DAWR is satisfied that the LGAP's auditing arrangements satisfy the relevant ESCAS auditing criteria.

Recognising equivalent importing country's livestock welfare regulations may also provide scope to reduce the burden of the ESCAS for Australian exporters operating in those countries. The ESCAS is likely to impose an unnecessary regulatory burden on exporters that are operating in markets that have equivalently high standards of animal welfare. For example, it is unclear whether the additional ESCAS regulations have resulted in any discernible improvements in animal welfare in Japan (Commonwealth of Australia 2015a). That said, the current regulatory burden may not be material for exporters operating in Japan as the move to a risk-based auditing approach has meant that auditing is now only required once per year for facilities and supply chains in Japan.

Exempting countries from the ESCAS would require DAWR to be satisfied that the regulations in other countries are at least equivalent to those of the ESCAS, both in principle and in practice. Difficulties arise where importing countries have regulatory arrangements in place but, in practice the requirements are not generally enforced.

Overall, the Commission considers that the ESCAS has helped to improve welfare outcomes of Australian live exports in some export markets. The system is complex and there are regulatory costs imposed on exporters, but there is scope for the burden on the industry to be reduced through greater exporter co-operation and sharing of audits. The LGAP could be a means of achieving greater co-operation and reducing costs for exporters.

However, whether the LGAP could be used by exporters to demonstrate compliance with the requirements of the ESCAS depends on whether it can be shown to assure the welfare

of Australian live exports in line with the Australian community's expectations. It is critical that the community has confidence in the system used to regulate live exports. Incidents of mistreatment of animals in facilities that are within the purview of the ESCAS and that are overseen by the Australian livestock industry reduce community confidence in the trade and the regulator's effectiveness.

If an independent body on animal welfare is established (as proposed earlier), it could also play a role in live export regulation. At a minimum, this role should involve reviewing the performance of the ESCAS, including the performance, independence and effectiveness of the auditing arrangements, and making recommendations for reform. This would help to address any perceived or actual conflict of interest in livestock regulatory arrangements, and ultimately help to further improve the welfare of Australian live exports.

6 Regulation of technologies and agricultural and veterinary chemicals

Key points

- New technologies and agricultural and veterinary (agvet) chemicals can improve the productivity, competitiveness and safety of farm businesses, as well as the quality of agricultural products. Any unnecessary barriers to their access should be removed.
- The Australian Government regulates genetically modified (GM) organisms to protect human health and safety and the environment. States and territories can only regulate GM organisms to address market access and trade concerns, and some jurisdictions have imposed partial or complete moratoria on the cultivation of GM crops.
- The co-existence of GM and non-GM crops is possible, and has been demonstrated in Australia and internationally. This brings into question the rationale for banning GM crops. The ability for GM and non-GM crops to co-exist means that if there are any trade and marketing advantages (such as price premiums) for non-GM crops, these can still be achieved when GM crops are in the market.
- Despite numerous reviews of, and subsequent reforms to, the regulation of agvet chemicals, concerns continue to be raised. These are primarily about:
  - unnecessarily lengthy, complex and duplicative registration procedures
  - interjurisdictional inconsistencies, such as in control-of-use regimes.
- The Australian Pesticides and Veterinary Medicines Authority (APVMA) could increase its use of international assessments and decisions for products already registered by trusted comparable regulators overseas.
- Reforms to achieve a national control-of-use regime are currently underway. However, progress has been slow. In addition, the proposed scheme includes only minimal harmonisation of off-label use provisions.
- Some of the issues that have been raised in relation to technologies and agvet chemicals may be the result of the institutional and governance arrangements of the Office of the Gene Technology Regulator and the APVMA. If so, there may be scope to reform these arrangements to ensure that they are appropriate and up-to-date.

Technology and agricultural and veterinary chemicals (agvet chemicals[14]) are widely used in Australian agriculture, and can play an important role in improving the productivity,

[14] As defined in the Commission's review into chemicals and plastics regulation, agricultural chemicals include herbicides, fungicides, insecticides and plant growth regulators (but excludes fertilisers, which are defined as industrial chemicals for the purpose of assessment). Veterinary chemicals include all substances used to prevent, cure or alleviate a disease or injury of an animal (PC 2008b).

competitiveness and safety in the sector, as well as the quality of agricultural products. For example:

- biotechnology (and better pest management) has reduced the use of pesticides in the cotton industry by over 90 per cent, improving environmental outcomes (NFF, sub. 61)
- early testing suggests that the use of drones is likely to reduce the financial costs and safety risks involved in monitoring and gathering cattle on large farms (CSIRO 2015c).

New agvet chemicals have also helped Australian farmers to manage their resources more effectively, improve the adaptability of their crops to environmental conditions, and improve the health of their livestock. Deloitte Access Economics (2013), in a report prepared for CropLife Australia, found that up to 68 per cent of the value of Australia's horticultural, grains and fodder crop production is attributable to the use of crop protection products.

However, new technologies and agvet chemicals can also pose risks to the Australian community and the environment. Regulations must be designed to manage these risks, without unduly impeding the productivity and competitiveness of the agricultural sector.

This chapter looks at regulatory arrangements for agricultural technologies (section 6.1) and agvet chemicals (section 6.2) that are imposing a material burden on the productivity and competitiveness of Australian farm businesses. Options to reduce regulatory burdens are also discussed.

Why government involvement?

Governments regulate agricultural technologies and agvet chemicals because of their potential risk to human health and safety, and the environment. For example:

- the risks associated with new technologies and chemicals may be unknown, either because of a lack of industry experience, or because of a lack of scientific information (inadequate information)
- consumers may not be aware that certain technologies or chemicals were used, or may not be able to verify that they were used safely, because they do not observe the production process (information asymmetry). Even if they could observe the production process, they may not know what constitutes safe use. (However, technological advancements may also be able to help overcome information asymmetries by providing better and more timely information)
- the use of certain technologies or chemicals could contaminate other cultivations in nearby fields (negative externalities).

The use of certain technologies and agvet chemicals can also affect Australia's export access to countries with specific requirements, such as maximum chemical residues in agricultural products.

Governments can intervene in various ways, including by developing and administering legislation to ban or control the use of technologies and agvet chemicals, developing policies and codes of practice, and funding research activities. Research activities are sometimes co-funded through industry levies (box 6.1).

Box 6.1 The use of levies in the agricultural sector

Levies (imposed on domestic products) and charges (imposed on imported and exported products) are used by some primary industries to support research and development (R&D), marketing and promotion, residue testing, and plant and animal health programs. These levies and charges are generally initiated by an industry body that has identified the need for funding to respond to a specific problem or opportunity.

Levies are sometimes used to fund Rural Research and Development Corporations (RDCs). RDCs allow Australian Government and primary producers to co-invest in R&D — the Australian Government matches industry funding up to 0.5 per cent of the gross value of production in a particular industry. There are currently 15 RDCs, five of which are Commonwealth statutory bodies. The remainder are industry-owned.

The Commission reviewed the RDC model in 2011 and found that the main rationale for government intervention in rural R&D was to address 'spillover' effects which would otherwise discourage producers from investing in socially valuable research. The Commission noted that while government intervention may be justified to address spillover-related market failures, it need not take the form of public funding support. For example, governments could intervene by protecting intellectual property or compelling all industry participants to contribute to the cost of R&D through levies. However, the Commission concluded that, in many circumstances, other mechanisms were unlikely to fully correct for under-investment by the private sector, and therefore public support was warranted.

The Commission also recommended reducing the cap on government matching contributions from 0.5 per cent to 0.25 per cent of an industry's gross value of production. The Government did not adopt the recommendation.

Sources: DAFF (2009); DAWR (2015o, 2015w); PC (2011e).

6.1 Regulating the evolving world of agricultural technologies

The technologies used by farm businesses have evolved over centuries (box 6.2). From the early days of simple mechanical farm equipment powered by horses and other domesticated animals, agricultural technology transitioned to fuel powered tractors and then to the vast range of complex farm machinery, electronic devices, software applications and genetic engineering techniques used today. Technology has also changed the way farmers operate their machines — remote computer monitoring systems, global positioning systems and self-driving tractors mean that farm machines can be used with less human involvement. Many of these technologies require access to the internet.

Box 6.2 Examples of agricultural technologies

Automation in the dairy sector

Technologies currently used in the Australian dairy industry include automatic gate timers, walkover weigh scale systems and automatic feeding and milking systems (Dairy Australia 2016). Automatic milking systems reduce the quantity of labour required for milk harvesting and provide greater flexibility around milking times and milking frequency.

> Each cow is fitted with a unique electronic identification tag that allows the cow to be 'recognised' electronically at gates and in the milking unit. A robotic arm cleans the teats, attaches the milking cups and sprays the teats of each cow. Each quarter is milked individually and cups are removed based on the milk flow from each teat, thereby minimising overmilking. (Dairy Australia 2014, p. 1)

Useful data on milk quality, milk output, feed intake and cow traffic are collected in the process.

Use of mapping technology to improve the efficiency of livestock transport

The CSIRO (2015b) is developing modelling tools that can be used to improve the efficiency of transporting livestock from Northern Australia to abattoirs on the east coast. (Moving northern Australian cattle from farm to market can involve distances of up to 2500 km, with land transport costs making up to 35 per cent of the market price of livestock). Decision support tools help identify the least cost route by incorporating data from 50 000 properties, 88 000 origin to destination combinations, and over 1.5 million recorded vehicle movements, and integrating factors such has truck configuration, livestock weight and regulatory constraints. According to the CSIRO (2015b), these tools have the potential to help reduce transport costs by over $10 million annually.

Other technologies in development

The CSIRO is also developing:

- thermal remote sensing technology on an unmanned aerial vehicle to determine the location of livestock in large rangelands — this may prove to be a reliable and cost-effective system of identifying animals in extensive landscapes (2015c)
- biosensors that mimic the smell receptors of animals to detect and measure odours and chemicals in different substances — this technology could be used to detect insect contamination in grain and detect other pests, weeds or diseases in commodities (2015a).

Advances in nanotechnology have the potential to drastically change the agricultural sector. For example, the benefits of nanopesticides include 'the release of active ingredients in a slow and targeted manner, protecting active ingredients against degradation and increasing the apparent solubility of active ingredients that are poorly water soluble' (APVMA 2015b, p. 1). This can reduce the cost and environmental impact of chemicals through the use of smaller quantities and more targeted usage.

The Commission heard concerns about the burden imposed by the regulation of agricultural technologies, mainly in relation to genetic modification (GM) technology, new plant breeding techniques, the regulation of drones, and lack of access to telecommunications infrastructure. Each of these are discussed.

Access to genetically modified organisms and products

Genetic modification involves using biotechnology to change the genes of plant and animal organisms. Currently, the only GM crops that have been approved for commercial release in Australia are certain varieties of canola and cotton that have been altered to be resistant to particular pests and/or herbicides (DAWR 2015e). Field trials are also underway for banana, barley, perennial ryegrass, safflower, sugarcane, wheat and white clover (ABCA 2015).

In addition, some GM products can be used:

- as ingredients in foods — including GM varieties of soybean, corn, potato, sugar beet, wheat and rice (FSANZ 2016c, 2016d)
- for the production of stockfeed — including GM cottonseed meal, imported GM soybean and GM canola meal (Ansell and McGinn 2009; FSANZ 2016d).

The bans or 'moratoria' on the cultivation of GM crops in certain states and territories were the main technology-related regulatory issue raised by participants, although some participants also raised issues around regulatory duplication.

This section discusses the efficiency and effectiveness of the regulatory arrangements for GM technology that address risks to the community and the environment, and assesses the need for state-based moratoria. Concerns regarding the mandatory labelling of GM foods are discussed in chapter 9.

The OGTR assesses GMOs for health and safety and environmental impacts

At the national level, genetically modified organisms (GMOs) are regulated through the *Gene Technology Act 2000* (Cwlth) and its associated regulations, with the objective of:

> … protect[ing] the health and safety of people, and [protecting] the environment, by identifying risks posed by or as a result of gene technology, and by managing those risks through regulating certain dealings with GMOs. (*Gene Technology Act 2000* (Cwlth), s. 3)

These regulations are administered by the Gene Technology Regulator, an independent statutory office holder, who is supported by the Office of the Gene Technology Regulator (OGTR). The Gene Technology Regulator prepares risk assessments and risk management plans in relation to GMOs, and issues licences for the release of GMOs into the environment (box 6.3).

The OGTR acknowledges that regulations should be proportionate to risk.

> All activities and decisions involve some level of risk. Therefore, protective measures should be commensurate with the level of risk (2013, p. 7).

The OGTR's risk assessments are based on scientific and technical evidence, as well as consideration of uncertainty (OGTR 2013).

Box 6.3 Powers of the Gene Technology Regulator

The Gene Technology Regulator and the Office of the Gene Technology Regulator (OGTR) apply protective measures at all stages in the regulation of gene technology. Their powers and responsibilities include conducting risk assessments, identifying effective risk management controls, issuing or refusing licences, and prohibiting dealings with genetically modified organisms (GMOs).

Conducting risk assessments

In assessing the risks posed by a GMO and identifying risk management controls, the OGTR implements a risk analysis framework based on the *Australian/New Zealand Standard ISO 31000:2009 Risk Management — Principles and guidelines.* Risk assessments provide a structured, reasoned approach to consider the potential harm from certain activities with GMOs, and include consideration of the following key questions.

- What could go wrong? Consideration is given to a range of circumstances where a GMO could harm people or the environment.
- How serious could the harm be? An assessment is made about the seriousness of potential harm using risk scenarios.
- How likely is the harm to occur? An assessment is made about the likelihood of potential harm using risk scenarios.
- What is the level of concern? The risk is assessed as negligible, low, moderate or high depending on the seriousness of the harm and the likelihood of it occurring.

Issuing licences

In accordance with subsection 56(1) of the *Gene Technology Act 2000* (Cwlth), the Regulator must not issue a licence for a dealing with a GMO unless satisfied that the risks to human health, safety and the environment can be managed. The Regulator also has powers to impose licence conditions and suspend, vary or cancel a licence.

Sources: *Gene Technology Act 2000* (Cwlth); OGTR (sub. 76, 2013).

In general, participants expressed support for the OGTR's science-based approach to risk assessments (AusBiotech, sub, 20; Australian Dairy Farmers, sub. 63; CropLife Australia, sub. 14; NSW Farmers, sub. 72). For example, AusBiotech described the relevant policy and regulation as 'evidence based, risk assessed and transparent, in line with world's best practice' (sub. 20, p. 5). Similarly, CropLife Australia, while noting some concerns with the regulatory arrangements (discussed below), said that it 'strongly believes the Australian regulatory system for GM crops is robust, science-based, transparent and provides certainty to applicants' (sub. 14, p. 13).

However, Gene Ethics said that:

> … the credibility, integrity and rigour of the FSANZ and OGTR regulatory systems are compromised in many ways. For instance, Our regulators should apply the Precautionary Principle as defined in the Convention on Biological Diversity (CBD) … (sub. 84, p. 12)

Some participants also saw scope for greater community consultation and engagement by the OGTR, particularly where farmers are directly affected by its decisions. For example, one cotton farmer interviewed by the Commission raised concerns about lack of consultation by the OGTR in its decision to burn 80 bales of cotton grown as part of an OGTR-monitored plant breeding trial (appendix C). Although the farm business was compensated, the farmer felt that lack of consultation and engagement (including deferral of meetings on a number of occasions) led to a heavy-handed decision.

Concerns were also expressed about the OGTR's processes. Some concerns related to duplication, both within the OGTR (for example, for different crops) and between the OGTR and other regulators, such as the Australian Pesticides and Veterinary Medicines Authority (APVMA) and Food Standards Australia New Zealand (FSANZ). Other concerns related to the time, cost and uncertainty associated with submitting an application for approval (box 6.4).

Box 6.4 Concerns about regulatory processes relating to GM technology

The Veterinary Manufacturers and Distributors Association (VDMA) said that roles are duplicated across different agencies.

> The assessment of veterinary vaccines by both the APVMA and OGTR is a genuine example of double regulation for no benefit, and incurs substantial unnecessary costs and delays. (sub. 79, p. 2)

CropLife Australia also identified overlapping reporting requirements.

> A comparison of the regulatory data requirements for assessment of GM products with incorporated pest and/or disease control by the Australian Pesticides and Veterinary Medicines Authority (APVMA), the Office of the Gene Technology Regulatory (OGTR) and Food Standards Australia New Zealand (FSANZ) shows a high level of concordance. (sub. 14, p. 1)

In addition, the Australian Food and Grocery Council suggested that stringent regulatory requirements could also lead to de facto duplication within the same agency.

> … [T]he Office of the Gene Technology Regulator requires each genetically modified crop variety to be subjected to the same regulatory regime, including field trials, before commercial use, despite most containing identical genes that have been used safely for decades elsewhere. (sub. 28, p. 16)

The VDMA said that the costs arising from duplication could hinder investment and innovation.

> It is estimated by one of our members that to comply with the OGTR DIR [dealings with intentional release of GMOs] requirements over and above the cost of APVMA requirements is > A$2 million/product for a vaccine used in intensively farmed food animals. Even more critically, it unnecessarily adds years to the regulatory process which equates to both a financial cost and project risk. To require assessment and approval by a second authority introduces a level of uncertainty that discourages manufacturers from proposing products that would be subject to this double assessment and approval, stifling innovation and reducing the number and range of products available to Australian primary producers. (sub. 79, p. 3)

The Australian Chicken Meat Federation also said that:

> [T]he time, cost and uncertainty of putting a product to the regulator (Office of the Gene Technology Regulator) is a significant disincentive to investment in the development of new technologies, such as some potential poultry vaccines, that involve the use of gene technologies. (sub. 40, p. 7)

FSANZ assesses genetically modified foods for health and safety risks

The Australian regulatory framework for gene technology distinguishes between GMOs, which are live and viable, and GM products (such as food), which contain GM material but are not necessarily live and viable. GM products are regulated by a number of other government agencies, such as:

- the Therapeutic Goods Administration for medicines, medical devices, blood and tissues
- FSANZ for GM food
- the APVMA for agvet chemicals
- the National Industrial Chemicals Notification and Assessment Scheme for industrial chemicals
- the Department of Agriculture and Water Resources (DAWR) for biosecurity aspects of imported GM products (CSIRO 2015d).

FSANZ regulates GM foods under Standard 1.5.2 of the Food Standards Code. Under this standard, GM foods require mandatory pre-market approval, including a food safety assessment, before being released into the food supply chain. FSANZ undertakes safety assessments which are in accordance with internationally established scientific principles and guidelines developed through organisations such as the OECD and World Health Organization (FSANZ 2016e) (box 6.5). It stated that:

> To date, gene technology has not been shown to introduce any new or altered hazards into the food supply, therefore the potential for long term risks associated with GM foods is considered to be no different to that for conventional foods already in the food supply. As a consequence, FSANZ does not consider that long term studies are generally needed to ensure the safety of GM foods. (2016e)

Box 6.5 **Food safety assessments for GM foods**

Food Standards Australia New Zealand safety assessments are characterised by:

- a case-by-case consideration of GM foods. This allows each food to be assessed according to its particular characteristics, including the type of genetic modification
- consideration of both the intended and unintended effects of genetic modification. For example, the intended effect of genetic modification of an organism may be a new trait such as insect protection, but unintended effects such as changed nutritional characteristics may also arise. Both of these effects are evaluated
- comparisons with conventional foods with an acceptable standard of safety. This enables the identification of similarities and differences between the GM food and an appropriate comparator, and allows identified differences to be characterised to determine any potential safety or nutritional issues.

Source: FSANZ (2016e).

This view is shared by international organisations. For example:

- the US Food and Drug Administration stated that:

  … credible evidence has demonstrated that foods from the [genetically engineered] plant varieties marketed to date are as safe as comparable, non-GE foods. (2015a).

- The World Health Organization recently reported that:

  GM foods currently available on the international market have passed safety assessments and are not likely to present risks for human health. In addition, no effects on human health have been shown as a result of the consumption of such foods by the general population in the countries where they have been approved. (2016)

- The OECD also said that:

  Worldwide, many people are eating GM foods (especially in North America and China) with no adverse effects on human health having been reported in the peer-reviewed scientific literature. (2000, p. 8)

FSANZ also actively monitors the scientific literature and other information about GM foods to determine if it needs to revise its safety assessments (FSANZ 2015e).

The Commission considers that the regulatory processes of the OGTR and FSANZ are sufficiently rigorous to protect the health and safety of the Australian community and the environment. While some participants raised concerns about duplication and costs associated with the OGTR's processes (box 6.4), the Commission has not identified the source of these issues. Therefore, the Commission is seeking further information on whether there is scope for improvement in the overarching regulatory objectives and/or institutional arrangements that underpin GM technology assessment. Specifically, do these achieve the right balance when weighing up the costs and benefits to the community?

State and territory governments regulate genetically modified organisms to address market access and trade concerns

State and territory governments have committed to a nationally consistent system for the regulation of GMOs to protect human health and safety and the environment. Under the inter-governmental Gene Technology Agreement 2001, state and territory governments have agreed to maintain legislation that corresponds with the Gene Technology Act (OGTR 2014). However, the agreement does not preclude states and territories from introducing their own legislation to address market access and trade concerns associated with producing and marketing GMOs. Some states and territories have used this power (table 6.1).

In 2003, after GM canola was approved for commercial release by the OGTR, all states and territories except for Queensland and the Northern Territory enacted moratoria on its cultivation. The moratoria in New South Wales and Victoria were subsequently lifted in 2008, following recommendations by independent reviews.

Table 6.1 **State and territory legislation and moratoria for GMOs**

State/territory	*Legislation, position and cultivation*
NSW	• *Gene Technology (GM Crop Moratorium) Act 2003* (NSW) imposes a moratorium on the commercial cultivation of GM crops, unless the specific crop has been approved or an order is made otherwise by the Minister. • Moratorium on commercial cultivation of GM food crops • Exemptions for cultivation of GM cotton and GM canola
Vic	• *Control of Genetically Modified Crops Act 2004* (Vic) empowers the Minister to make orders designating areas where GM crops must not be cultivated • No moratorium • Commercial cultivation of GM canola
Qld	• No moratorium • Commercial cultivation of GM cotton
SA	• *Genetically Modified Crops Management Act 2004* (SA) empowers the Governor, on recommendation of the Minister, to designate areas where GM food crops cannot be grown • Moratorium on commercial cultivation and transport of GM food crops and/or seed • Entire state classified as a GM free zone • Exemptions granted for field trials under specific conditions
WA	• *GM Crops Free Areas Act 2003* (WA) empowers the Minister to designate areas where GM crops or a specific GM crop must not be cultivated, although a Bill to repeal this legislation is currently before parliament. • Moratorium on commercial cultivation of all GM crops • Exemptions for commercial production of approved GM cotton and GM canola
Tas	• *Genetically Modified Organisms Control Act 2004* (Tas) empowers the Minister to declare the whole or any part of Tasmania to be an area that is free of GMOs • Moratorium on commercial cultivation of all GM crops • Entire state classified as a GM free zone
NT	• No moratorium • No commercial cultivation of GM crops
ACT	• *Gene Technology (GM Crop Moratorium) Act 2004* (ACT) empowers the Minister to prohibit the cultivation of a stated GM food plant. • Moratorium on commercial cultivation of all GM crops • Exemptions permitted for trials under specific conditions

Sources: ABCA (2015); ACT Health (2013); TDPIPWE (2014b); WA Government (sub. 54).

The South Australian Government stated that it:

> … has retained its prohibition on the cultivation of GM food crops including canola to ensure that South Australia can retain its position in the global marketplace and retain one of the attributes that underpin the State's economic priority Premium Food and Wine Produced in our Clean Environment and Exported to the World. (sub. 57, p. 18)

Similarly, the Tasmanian Department of Primary Industries, Parks, Water and Environment (TDPIPWE) said that its moratorium 'is intended to position the State in the global marketplace as a producer of food that is genuinely GMO-free' (2013, p. 3).

These benefits are questionable (box 6.6). However, even if they were realised, the Commission questions the validity of market access and trade concerns as reasons for state

and territory governments to impose moratoria, given that GM and non-GM production systems can coexist (discussed below). The ability for GM and non-GM systems to co-exist means that the claimed benefits of the moratoria (such as achieving price premiums for non-GM crops) would not be affected by the presence of GM crops.

Box 6.6 The marketing benefits of GM moratoria are questionable

Some states and territories argued that maintaining a GM-free status is an essential component of their marketing and branding that allows them to obtain market access or a price premium in domestic and international markets. For example, during the second reading debate for the Genetically Modified Organisms Control Amendment Bill 2014 (Tas), David Llewellyn said that:

> Some years ago I was told by Mr Armstrong from Harvest Moon that he could export some of his products into Japan in plain boxes but he could get a 10 per cent increase in the same products if the boxes listed Tasmania as a source for those products. It goes to show that we need to harness the opportunities that are available in this state to market our products. In doing that we need to live up to the reputation that we have gained of being clean, quality and green in our marketing process. (2014)

Locke (2016) reported that GM canola consistently sells for a lower price than non-GM canola, with the 2015-16 harvest in Western Australia marked down by up to $50 per tonne. There is also some evidence that some non-GM grains attract a higher price than their GM counterparts in certain niche high-income markets, where mandatory labelling for GM exists (Foster 2010).

However, evidence also suggests that in many instances, non-GM products do not command a price premium at the bulk trade level. Both the New South Wales and Victorian reviews found that there was no evidence to indicate a market or price advantage for Australian canola marketed as non-GM (Armstrong, Adams and Reeves 2007; VDPI 2007). And Primary Producers SA submitted that:

> … the argument that the ban is gaining SA producers premiums is not supported by any real evidence, and grain prices suggest otherwise. (sub. 41, p. 4)

Moreover, the marketing benefits of the moratoria may be small due to the small number of products that rely on non-GM branding. The review of the moratorium in Tasmania said that:

> … it is clear that only a small proportion of the State's food and agricultural output is currently marketed as Tasmanian and within that, only a small number of producers are using the specific attribute of GMO-free as part of the branding and marketing. (TDPIPWE 2013, p. 35)

Can GM and non-GM production systems co-exist?

The co-existence of GM and non-GM production systems can be considered at two levels. As the TDPIPWE explained:

> The first is practical: the segregation of GM from non-GM crops to manage the risk of contamination. The other is market based: whether GM and non-GM products can co-exist in the marketplace without causing harm to particular products, markets or the Tasmanian brand as a whole. (2013, p. 7)

Cross-contamination between GM and non-GM production systems can arise in a field (box 6.7) or when produce is being processed (box 6.8). Cross-contamination that results in the loss of marketing advantages is a market failure known as a negative externality.

Box 6.7 The case of *Marsh v Baxter*

In *Marsh v Baxter*, organic farmers Stephen and Susan Marsh lost their organic certification because their crop was contaminated by genetically modified canola grown in the neighbouring farm owned by Michael Baxter. The Marshes brought proceedings in the Supreme Court of Western Australia, alleging private nuisance and common law negligence, seeking a permanent injunction and damages for economic losses of $85 000.

However, the case was dismissed. The reasons given were that:

- a private nuisance had not been established, as there had been no unreasonable interference by Mr Baxter in the Marshes' use and enjoyment of their property.
- a duty of care for purely financial losses is without precedent, defeating the action in common law negligence.

The court also noted that Mr Baxter had used a well-accepted method for growing and harvesting genetically modified canola, and that the decision by the organic certifier (the National Association for Sustainable Agriculture Australia) to revoke the Marshes' organic certification ran contrary to guidelines and rules under which it operated.

The plaintiffs unsuccessfully appealed the decision in the WA Court of Appeal. An application for leave to appeal to the High Court of Australia was also dismissed.

Sources: *Marsh v Baxter* [2014] WASC 187; *Marsh v Baxter* [2015] WASCA 169.

Box 6.8 Cross-contamination during processing

In a member's statement to the WA Legislative Council, the Hon. Darren West MLC recounted his experience of cross-contamination at a Cooperative Bulk Handlers receival site in Avon. He was told that his canola would have to be processed as GM canola due to contamination:

> I [was] told, "Sorry to do this to you, but … one of the samplers has accidently thrown a bucket of GM canola on top of your load of non-GM canola." I now had this contaminated load of canola. I was very unhappy about that and I asked the manager of the Avon receival site whether we could remove the GM canola from the top of my load of non-GM canola, because it was very easy to see; it was a very different colour. He informed me, "Don't worry, you will still be paid the price for non-GM canola", which has a $58 premium over GM canola, "but you will have to tip that load of GM canola into the GM stack, because we have zero tolerance for contamination by GM canola in our canola stacks." (West 2015, p. 9268)

He estimated that the total cost of the reclassification of his canola was $1334.

Source: West (2015).

It may not be possible to completely eliminate the potential for cross-contamination. However, evidence suggests that it is possible to manage segregation throughout the supply chain such that GM and non-GM systems can co-exist.

- Both the NSW and Victorian reviews of the moratoria on GM canola found that industry stakeholders considered that they had the ability to successfully segregate GM and non-GM canola in the supply chain (Armstrong, Adams and Reeves 2007; VDPI 2007).

- The Western Australian Government also noted that since the introduction of GM canola in WA in 2010, the industry has been able to successfully segregate GM and non-GM canola (sub. 54).
- The Pastoralists and Graziers Association of Western Australia said that:

  > The state's leading grain logistics company CBH has no difficulties segregating GM and non-GM canola at its receival points, silos, train sets, grain centres and port terminals. (sub. 70, p. 5)

- CropLife Australia also said that:

  > GM and non-GM canola has been grown side-by-side successfully and productively without creating marketing issues. With 7 years under our belt of growing GM canola, there has not been one incident across more than 5.6 million tonnes of canola seed delivered domestically, or more than 15 million tonnes delivered internationally, where an end user … has not received what they had ordered in terms of the GM status. (sub. 14, p. 11)

In addition, the ability for GM and non-GM crops to co-exist in the marketplace is evidenced by the growth of the organic food sector in countries where GM crops are grown. As noted by the Victorian Department of Primary Industries (VDPI):

- US production of organic corn and soybean has increased since the introduction of GM varieties. Organic production of cotton decreased after the introduction of GM varieties, but this was due to low consumer demand for organic cotton.
- In Canada (where GM foods have been available since 1994), the organic sector increased by 60 per cent between 2002 and 2007. (VDPI 2007)

The VDPI said that 'collectively, this points to the feasibility of the successful coexistence of organic and GM production systems in Victoria' (2007, p. 62).

The ability for state and territory governments to impose moratoria should be based solely on a demonstrated market failure regarding the co-existence of GM and non-GM production systems. That is, states and territories should only be able to impose moratoria on the cultivation of GM crops if this has unavoidable negative spillovers on non-GM crops (and they should only do so if the negative spillovers outweigh the benefits of GM technology). The discussion above shows that there is no such market failure, and therefore that state and territory governments should not have the ability to impose moratoria.

Moratoria are likely to impose net costs on the community

In addition to being unjustified on market failure grounds, state-based moratoria are likely to impose a net cost on the Australian community. Several reviews and regulatory impact statements (RISs) to evaluate the costs and benefits of the moratoria have consistently failed to demonstrate net benefits. For example, the RIS conducted by the TDPIPWE to assess an extension of the Tasmanian moratorium until 2019 found that maintaining the moratorium would have a quantifiable net cost of $1.5 million (box 6.9).

Box 6.9 Economic assessments of moratoria on cultivating genetically modified organisms (GMOs)

Tasmania's regulation impact statement for extending its moratorium

Tasmania's regulation impact statement (RIS) for extending its moratorium on genetically modified (GM) crops examined the costs and benefits of two options — maintaining Tasmania as a GMO-free area or allowing the cultivation of GMOs.

- A marketing advantage in domestic and international markets was noted as one of the main benefits of maintaining Tasmania as a jurisdiction free of GMOs. The value of that marketing advantage was not quantified, but was assessed to be 'not insignificant'.
- The benefits of allowing GM crops in Tasmania were theoretically assessed as being relatively small because only GM canola was suitable and available for commercial production in Tasmania at the time.
- The quantifiable net cost of retaining the moratorium for a further five years was estimated to be $1.5 million, over 70 per cent of which were regulatory costs borne by the Tasmanian Government.

Despite this assessment, the RIS concluded that:

> In light of the strong stakeholder support for extending the moratorium and feedback from producers who perceive that they gain a significant market advantage from the State's GMO free status the benefits of the moratorium, although difficult to quantify, are assessed as substantial. These benefits are assessed as likely to exceed the cost of extending the moratorium for 5 years. (TDPIPWE 2014b, p. 4)

Review of Victoria's moratorium on the cultivation of GM canola

In May 2007, an independent panel was established by the Victorian Government to review the State's moratorium on the commercial cultivation of GM canola. The four-year moratorium was established in Victoria in 2004 based on trade and market access considerations. The review found that:

- the moratorium imposed a direct net cost of $60-65 million to the Victorian economy
- extending the moratorium for a further eight years would impose a direct net cost of $110-$115 million.

The review panel recommended that the moratorium be lifted. The Victorian Government accepted this recommendation and allowed the moratorium to expire in 2008.

Sources: TDPIPWE (2014b); VDPI. (2007).

However, the Tasmanian Government extended the moratorium on the basis that the unquantified marketing benefits were likely to exceed the costs. In addition, it claimed the presence of sensitive information to justify not publicly releasing the full RIS, providing only a summary (TDPIPWE 2014b). In contrast, Victoria's moratoria was lifted following an independent review which found that the moratoria imposed a net cost on the Victorian economy (box 6.9).

Industry bodies submitted to this inquiry that the moratoria on GM crops are adversely affecting their productivity and competitiveness (Primary Producers SA, sub. 41;

Australian Dairy Farmers, sub. 63). For example, the National Farmers' Federation (NFF) said that:

> With much of the science community expelling the fears surrounding GM crops, this moratorium acts solely to restrict the ability of farmers to choose their production means and methods, and in doing so limits innovation and growth in the sector. (sub. 61, p. 15)

In addition, the VDPI said in its review of the now-expired Victorian moratorium on GM canola that:

> … the moratorium and the *Control of Genetically Modified Crops Act 2004* (Vic.) have an undesirable impact on innovation in Victoria by discouraging private sector investment in agricultural science, decreasing Victoria's ability to retain scientific capabilities, and discouraging application of new technologies in pursuit of economic advantage. (2007, p. 8)

The review identified the costs of the moratorium to include:

- reduced yields of non-GM varieties compared to GM varieties
- costs imposed by the use of more herbicides
- increased cultivation costs
- reduced ability of Victorian grain producers to adapt to changing circumstances and remain competitive over time, if the moratorium was extended (VDPI 2007).

Moratoria can also raise the operating costs of farm businesses.

- The presence of a layer of regulation by state and territory governments, in addition to regulation by the Australian Government, imposes unnecessary costs on farm businesses operating across jurisdictions. Farm businesses wanting to use new GM-related biotechnologies must effectively seek approval from two levels of government (AusBiotech 2014).
- The inability to transport GM crops through certain states increases transport costs. The Australian Seed Federation said that because of the moratorium in South Australia, '[C]anola seed companies/producers in the Eastern states and Western Australia are now forced to ship GM canola seed by sea or move by road transport through Darwin, avoiding the natural transport route through South Australia' (2011, p. 7).

The moratoria should be removed

New South Wales, Western Australia, South Australia, Tasmania and the ACT should remove their moratoria on GM crops. State and territory governments should also repeal the legislation that imposes the moratoria or gives them the discretion to designate their jurisdiction as a GM-free zone. This will increase certainty to businesses that the moratoria will not be re-introduced in the future.

The removal of state and territory moratoria will result in a nationally consistent system for the regulation of GMOs by the OGTR. To strengthen this system, state and territory

governments should automatically adopt into law any amendments made to the Commonwealth legislation. This is the current approach in New South Wales and the Northern Territory, and is an efficient means of maintaining uniform regulations and avoiding periods of legislative inconsistency (and uncertainty), which can occur as each jurisdiction arranges for the passage of new amendments to the Commonwealth Gene Technology Act (OGTR 2011).

Community concerns about gene technology

Although the purpose of the moratoria are to address market access and trade concerns, evidence suggests that members of the Australian community support the moratoria for a range of reasons, including because they are concerned about the effect of GM technology on human health and safety.

- Madge Australia supported the moratoria because of concerns about the health and safety of GM food. In its submission to Victoria's review of the moratorium on GM canola, it said that:

  > … it is obvious that the moratorium on growing GM canola must be extended to 2013. Independent studies need to be done on GM food and crops. Labelling and testing of GM foods must be monitored and enforced. (2007, p. 11)

- Gene Ethics considered that states' power to have GM-free zones 'are an appropriate response to market failure and cartel control' (sub 90, p. 1). The 'market failure' referred to was the occurrence of food shortages in certain areas of the world while gluts existed in others (although in general the Commission considers this to be a failure of government, such as in Zimbabwe, rather than a failure of markets). In relation to 'cartel control', it said that:

  > If Bayer takes over Monsanto, a cartel of just four huge conglomerates will own and control most commercial seed and agricultural chemical supplies. (sub 90, p. 1)

- Neville Newell MP noted in the second reading speech of the NSW Gene Technology (GM Crop Moratorium) Bill 2003 that:

> Most of the concerns in the community are based on the practical use of this [GM] technology and its impact on human health, the environment and marketing of agricultural products, especially non-GM products. (2003, p. 2)

Concerns within the community about the health and safety of GM foods are widespread, and are not insignificant. The Swinburne National Technology and Society Monitor has consistently found that about half of all Australians surveyed are not comfortable with GM foods (Bruce and Critchley 2012, 2013; Swinburne University of Technology 2006, 2009, 2012). In 2012, an Australian National University survey also found that 36 per cent of respondents felt that GM foods are not safe to eat, and 20 per cent were unsure (Lockie and Pietsch 2012). (44 per cent of respondents said that they felt GM foods are safe to eat). Industry groups acknowledge that concerns about the safety of GM foods pose a barrier to the market acceptance of GM technologies (GrainGrowers 2015; Growcom 2015).

The removal of the moratoria is likely to face opposition from those who believe that GM food is unhealthy or unsafe. However, these beliefs do not provide a rationale for banning GM crops if they are incongruous with regulatory assessments of the scientific evidence (disregarding that moratoria can only be imposed for economic reasons).

Addressing community concerns through improved communication

The Commission considers that governments have a role in providing information about the benefits and risks of GM technology. This is analogous to the role of government in providing information about vaccinations to counter misleading safety claims which can harm public health. Misinformation about GM technology could result in the community forgoing the benefits of GM food — *Golden Rice*, for example, is a GM rice variety that has been found by some studies to be an effective source of vitamin A, and to have the potential to contribute to alleviating vitamin A deficiency (Beyer et al. 2002; Golden Rice Humanitarian Board 2016; Tang et al. 2009).

Some inquiry participants called on governments to provide accurate information to the community about GM technology. The Australian Food and Grocery Council said that:

> It is the responsibility of governments and indeed scientists to educate the public on the facts behind [GM] technological innovation so that Australians can benefit from the scientific discovery generated in this country (sub. 28, p. 16)

The Australian Food Sovereignty Alliance also said that:

> Labelling of GMO ingredients is also a clear area of public concern, and therefore governments have a responsibility to ensure the public are given sufficient information to make decisions about their families' purchasing and eating choices. (sub. 27, p. 13)

Governments are uniquely placed to provide information about GM technologies. As Dolling and Peterson explained, information provision by governments can:

> … be useful for overcoming the amount of information available, and for improving its quality and credibility. Providing information on the quality and extent of safety assessments may also assist consumers to make more informed decisions about whether they consider these assessments adequate and reliable. (2000, p. xi)

The Commission notes that some agencies already provide information to the public about GM technologies. For example, both FSANZ and the OGTR provide clear and accessible information about their risk assessment processes on their websites. In addition, risk communication is a key part of the OGTR's risk analysis process (OGTR 2013), and FSANZ (2015e) publishes its responses to studies that claim to show that GM foods have adverse effects, or that have been interpreted by others as being evidence of adverse effects.

However, there is scope for governments and regulatory agencies to provide more information. This was noted in previous reviews, such as:

- the review of the Gene Technology Act in 2011, which recommended that '[t]he OGTR increase its communications to the general public to raise its profile and build confidence in Australia's regulation of gene technology' (Allen Consulting Group 2011, p. 33).
- the review of the *Gene Technology Act 2001* (Qld) in 2013, which recommended that the Queensland Government:

  > … [support] more effective communication to its stakeholders highlighting the effectiveness of the science-based precautionary approach to regulation of gene technology and the effective and efficient administrative oversight of the Office of the Gene Technology Regulator, while acknowledging the broader role of the Commonwealth to more effectively communicate a similar message to the Australian public. (Taylor, Mitchell and Sward 2013, p. 8)

The Commission considers that the removal of the moratoria and the repeal of their enabling legislation provides an opportunity for governments to clarify misinformation about GM technologies. As part of the process to remove the moratoria, state and territory governments should provide information about the *actual* benefits and risks of GM technology, and the regulatory framework for gene technology which seeks to protect human health and safety and the environment. These efforts should be supported by the OGTR and FSANZ promoting similar information.

DRAFT FINDING 6.1

There is no economic or health and safety justification for banning the cultivation of genetically modified (GM) organisms.

- The Office of the Gene Technology Regulator (OGTR) and Food Standards Australia New Zealand (FSANZ) assess GM organisms and foods for their effect on health, safety and the environment. Scientific evidence indicates that GM organisms and foods approved by the OGTR and FSANZ are no less safe than their non-GM counterparts.
- The successful coexistence of GM and non-GM crops is possible and has been demonstrated both in Australia and overseas. This means that if there are any market access or trade benefits (including price premiums for non-GM products), they would be achieved regardless of whether GM crops were in the market.

DRAFT RECOMMENDATION 6.1

The New South Wales, South Australian, Western Australian, Tasmanian and Australian Capital Territory governments should remove their moratoria (prohibitions) on genetically modified crops. All state and territory governments should also repeal the legislation that imposes or gives them powers to impose moratoria on the cultivation of genetically modified organisms by 2018.

The removal of the moratoria and repeal of the relevant legislation should be accompanied by the provision of accurate information about the risks and benefits to the Australian community from genetic modification technologies. State and territory governments, the Office of the Gene Technology Regulator and Food Standards Australia New Zealand should actively coordinate the provision of this information.

New breeding techniques

'New breeding techniques' (NBTs) refer to a suite of recently developed biotechnologies, including:

- reverse breeding, which involves using a combination of techniques to create parental lines that recreate an elite hybrid crop when crossed
- cisgenesis and intragenesis, which involve introducing traits or genetic material from the same or closely related species
- GM rootstock grafting, which involves the grafting of the vegetative part of a non-GM plant onto the rootstock of a GM plant. (FOE 2015)

NBTs allow for more precise changes to genetic material compared to previous gene manipulation technology. AusBiotech said that:

> New breeding techniques show technical advantages when compared to 'older' techniques: some … allow site-specific and targeted changes in the genome … the use of new breeding techniques [also] makes the breeding process faster, which lowers the production costs. (sub. 20, pp. 7–8)

CropLife Australia also said that:

> In most cases, new breeding techniques are innovative improvements and refinements of traditional breeding methods used to optimise plant health, nutritional quality and yield. (sub 14, p .9)

However, uncertainty about whether or not NBTs are captured by the definition of 'GMO' in Australian legislation is affecting its adoption. AusBiotech said that:

> Biotechnology companies and plant and animal breeders are particularly concerned about the legislative uncertainty of the GMO classification of new breeding techniques. The registration costs will be low if a technique is classified as non-GMO or very high if classified as GMO. Therefore, the legal status of the new breeding techniques will influence the decision on

> whether to use these techniques only for the introduction or modification of traits in products with very high value or more extensively for a broad field of applications … (sub. 20, p. 8)

It also said that regulatory uncertainty is affecting the competitiveness of the agricultural industry (sub. 20).

Uncertainty about the GM status of NBTs occurs because, as the OGTR explained:

> … during the development of the [Gene Technology Act] is was felt that moving and rearranging genes between species constituted gene technology and therefore created GMOs, whilst techniques that either mimicked natural processes or worked through natural mechanisms did not create GMOs. At the time there was a clear distinction in this regard but technology has advanced and there is no longer such a clear distinction. (pers. comm., 27 May 2016)

FSANZ has also encountered similar issues regarding definitions under Standard 1.5.2 of the Food Standards Code. This standard regulates food produced using gene technology. FSANZ noted that when it began receiving inquiries about the regulatory status of various NBTs in 2011, 'it was not immediately clear whether … such techniques would be captured by the current definitions.' (FSANZ 2013b, p. 6).

Efforts are underway to clarify the GM status of new breeding techniques

In determining whether to classify NBTs as gene technologies under regulation, it is fundamental to consider what would be most scientifically appropriate. The Commission heard conflicting views about whether or not NBTs should be regulated as GM technologies (box 6.10).

Box 6.10 Community views on whether new breeding techniques (NBTs) should be regulated as GM technologies

Community views on whether NBTs should be regulated as GM technologies are mixed. CropLife Australia said that:

> Although the relevant Australian regulators (OGTR and FSANZ) have yet to reach a decision on whether products developed using NBTs will be regulated as gene technology, CropLife is concerned about the unnecessary regulation of products developed using NBTs simply based on the breeding technique employed and not on the characteristics of the final products. In many cases, NBTs result in products that are similar or indistinguishable from products developed through traditional breeding methods. (sub. 14, p. 9)

AusBiotech (sub. 20, p. 8) also considered that NBTs do not pose a health or biosecurity risk, and therefore urged a 'light touch' regulatory approach.

On the other hand, Friends of the Earth referred to NBTs as 'new GM techniques', and argued that:

> … the current regulatory approach to GMOs should be the minimum requirement for these new GM techniques … because it at least provides a basis for assessing any potential risks that result from the genetic engineering process. (2015, p. 7)

In 2012, FSANZ convened an expert scientific panel to enhance its scientific knowledge of several NBTs, and to gather scientific evidence on the nature of the food products derived from them. The panel concluded that food produced using techniques such as cisgenesis, transgenesis and GM rootstock grafting should be regarded as GM foods and undergo mandatory premarket safety assessment. However, other techniques such as oligo-directed mutagenesis and zinc-nuclease technology were similar to those used in conventional plant breeding, and therefore food produced using these techniques should not be considered GM foods. The panel also considered that more information was needed on some techniques (such as reverse breeding) to determine whether the foods produced using these techniques should be considered GM (FSANZ 2013b).

The OGTR is currently conducting a technical review of the Gene Technology Regulations 2001 (Cwlth) to ensure that the regulation of dealings with GMOs remains commensurate with risk, according to current science (OGTR, pers. comm., 27 May 2016). It is expected that the review will improve clarity about whether or not NBTs should fall within the scope of the regulations. The OGTR plans to undertake broad consultation with the public, state and territory governments, regulated entities, industry bodies and scientific experts before making any proposals to amend the regulations (OGTR, pers. comm., 27 May 2016).

The regulatory experience regarding NBTs highlights the importance of ensuring that regulations keep pace with technological advancements. Regulations that lag behind innovations can give rise to uncertainty, impose costs on businesses, and discourage innovation. The OGTR acknowledged that:

> Stakeholders wishing to ascertain the regulatory requirements associated with proposals involving the application of emerging and new gene technologies are disadvantaged where the Regulator is unable to provide advice with legal certainty until requisite legislative amendments are in place. (OGTR 2011, p. 4)

By contrast, regulations that are flexible and responsive facilitate the adoption of new technologies, and enable Australia to increase its productivity and competitiveness. Regulators that are able to anticipate issues — through, for example, monitoring international developments in technology and the regulatory responses of overseas governments — are likely to be more effective in responding to developments. This includes reducing the extent of regulation when developments in science are sufficient to abate uncertainties about the safety of new technologies (chapter 14).

Regulation of drones

Farm businesses use drones for a range of purposes, including remote monitoring of water points and stockyards, and feed availability. Drones can also be equipped with sensors to diagnose animal health issues such as heat stress. As such, this technology can improve farm profitability by reducing treatment costs and cattle stress (CCA, ALFA and

SCA 2015). While the adoption of this technology in agriculture is presently low, wider use in the future could lead to substantial productivity gains.

Some farm businesses argued that current regulations governing the use of drones impose an unnecessary burden. This includes the requirement that drones only be used within the line of sight of the operator (see, for example, CCA, ALFA and SCA 2015), which limits the use of drones on large farms and where cattle are located in remote locations.

Forthcoming regulatory changes are likely to address some of these concerns. The Civil Aviation Safety Authority (CASA), which regulates the use of drones, recently announced changes that will ease regulatory requirements for the remotely piloted aircraft industry.

- Commercial operators of very small remotely piloted aircraft will no longer require a number of regulatory approvals such as an operator's certificate and a remote licence. This applies to aircraft weighing less than 2 kg at take-off. However, the line of sight requirement will stay.
- Private landholders (such as farm businesses) will be able to undertake a range of activities on their land without requiring approvals from CASA. This includes using remotely piloted aircraft weighing up to 25 kg where no money is paid for flights (CASA 2016).

The changes will take effect in September 2016.

Access to telecommunications infrastructure

The lack of access to telecommunications infrastructure in regional Australia was a commonly reported source of frustration for farm businesses. For example, Larry Acton said that:

> There are long delays in repairing [telephone cable] faults … When we report a fault … the operator suggests diverting the phone to our mobiles until repairs are done. There is almost no mobile service in our area … also it means that our internet access for the computer, which is wireless, has to have a long aerial on the roof. (sub. 55, pp. 4–5)

The Australian Forest Products Association also submitted that:

> Regional industries continue to face communications infrastructure constraints across phones, data and radio networks that impact on important operational (e.g. harvesting, processing and manufacturing) and emergency (e.g. firefighting and workplace health and safety) communications. (sub. 11, p. 14)

Unreliable internet services were also raised as an issue during the Commission's consultations and case study interviews. One farmer told the Commission that they were unable to access high-speed and reliable internet services despite the farm being within 10 km of a major population centre (appendix C). The farmer said that unreliable internet services mean that emails containing information about important changes to regulation, or requests to comply with regulation, may never arrive. Similarly, responses to requests may

need to be sent multiple times, or involve switching between devices depending on what is working at the time.

The Commission recognises that unreliable phone and internet connections can add to the transaction costs associated with complying with regulation. As such, they can contribute directly to the regulatory burden felt by farm businesses. However, the Commission does not consider the availability of telecommunications infrastructure to be a regulatory issue in that it is not limited by regulation, but rather depends on investment decisions by governments, industries and the community.

The Commission notes that, in the Agricultural Competitiveness White Paper, the Australian Government stated its commitment to enhancing access to communications technology in regional areas by improving regional satellite services, improving coverage of the National Broadband Network, and improving mobile coverage through the Mobile Black Spots Program (Australian Government 2015a). The Commission is also currently conducting an inquiry into the future direction of a universal service obligation in the telecommunications market, which will address issues relating to access to telecommunications (PC 2016).

6.2 Access to agricultural and veterinary chemicals

Agvet chemicals benefit the Australian community by allowing farm businesses to protect their crops and livestock against harmful pests and diseases. However, they may also pose risks to the community and the environment, especially if used incorrectly. Governments regulate access to agvet chemicals to manage these risks.

Effective and efficient regulation of agvet chemicals provides numerous community-wide benefits, such as ensuring that:

- farm businesses have access to agvet chemicals suited to Australian conditions
- available agvet chemicals do not have harmful impacts on human health and safety, and the environment
- the level of chemical use in agricultural exports abides by the thresholds allowed in the importing country.

In some cases, effective and efficient regulation may mean that an agvet chemical that has been approved for use overseas is banned in Australia. This could occur if, for example, the chemical poses a significant threat that is unique to Australia.

On the other hand, inefficient or ineffective regulations can unnecessarily slow down the approval process, or fail to approve chemicals that would provide net benefits to the Australian community. This can increase production costs and impede the productivity of Australian farm businesses.

Access to agvet chemicals in Australia depends on an array of regulations administered by the Australian and state and territory governments. A national system of regulation applies up to the point of sale, and state and territory governments regulate the use of agvet chemicals after the point of sale (box 6.11). There have been a number of reviews of, and reforms to, the regulatory arrangements for agvet chemicals in recent years (box 6.12).

Box 6.11 The regulatory framework for agvet chemicals

The registration of all agricultural and veterinary (agvet) chemicals in Australia is regulated through the National Registration Scheme for Agricultural and Veterinary Chemicals, a partnership between the Australian, state and territory governments. The scheme is underpinned by an intergovernmental agreement under which state and territory governments have conferred their power to the Australian Government to regulate the supply of agvet chemicals up to the point of sale. States and territories have also adopted a template Agricultural and Veterinary Chemicals Code (Agvet Code). The Department of Agriculture and Water Resources has a role in the governance and oversight of the scheme.

The Australian Pesticides and Veterinary Medicines Authority (APVMA) is an independent statutory regulator that was established in 1993 and discharges the responsibilities of the Australian Government. It employs approximately 150 staff and exists within the portfolio of the Minister for Agriculture. The APVMA regulates agvet chemicals used by farmers, pest controllers, veterinarians, and other home or professional users up to, and including, the point of retail sale.

Unless exempt, an agvet chemical product must be registered by the APVMA before it can legally be supplied, sold, or used in Australia. Chemical products are assessed for their impact on human health, the environment, and trade, as well as on their efficacy. Some aspects of assessment are performed within APVMA after consultation with other agencies, such as the Office of the Gene Technology Regulator.

State and territory governments are responsible for controlling the use of agvet chemicals after the point of retail sale. This includes responsibility for:

- ensuring that agvet chemicals are used legally (according to APVMA's specifications)
- formulating training requirements for licencing and use of higher risk products
- licensing professional users
- monitoring licence compliance and chemical residues in produce and the environment
- conducting activities such as investigations, enforcement, compliance, education and extension.

Sources: APVMA (2016b); DoA (2014c); DAWR (2015u); PC (2008b).

Despite these numerous reviews and reforms to the APVMA's operations in recent years, the Commission heard remaining concerns about:

- the time and cost required to achieve chemical registration
- inconsistencies in state and territory control-of-use regimes
- difficulties in accessing chemicals for minor uses.

Participants were also concerned about the introduction of the Globally Harmonised System for the Classification and Labelling of Chemicals (GHS) for agvet chemicals in January 2017.

Box 6.12 Recent reviews of and reforms to the regulation of agvet chemicals

There have been a number of reviews of the regulatory arrangements for agvet chemicals in recent years, including:

- a review of plastics and chemicals regulation undertaken by the Commission in 2008, which found that the operations of the Australian Pesticide and Veterinary Medicines Authority (APVMA) were ineffective and inefficient. For example, products that posed a low risk to public health and the environment were subject to lengthy and complicated assessments and registration processes.
- the review of the APVMA in 2011 by the Department of Agriculture, Fisheries and Forestry, which found that:
  - the APVMA's processes were inflexible and lacked clarity
  - a one-size-fits-all rather than a risk-based approach for applications was used
  - unnecessary data requirements were sometimes imposed on applicants.
- a study by the Australian Bureau of Agricultural and Resource Economics and Sciences, which found that access to agvet chemicals for minor use was restricted by factors such as the high cost of applying for a minor use permit. (A minor use permit allows the use of a chemical where the economic return to an applicant would not cover the cost of full registration.)
- the Agricultural Competitiveness White Paper, which noted that agvet chemical regulation is often disproportionate to the risks that the products pose. The Paper argued that this increases the cost of agvet chemicals and limits access to productivity enhancing chemicals.

The Australian Government has also reformed the operations of the APVMA on several occasions.

- In 2013, changes were made to the approval, registration and reconsideration of agvet chemical products. The changes included implementing a risk framework to align regulatory effort with chemical risk, and implementing and publishing guidelines that the APVMA must adhere to.
- In 2014, the agvet chemicals legislation was amended to remove the need for agvet chemicals to be periodically re-approved and re-registered, and to improve access to information about the APVMA's processes.
- In 2015, certain types of animal feed (previously classified as veterinary chemical products) were excluded from regulatory assessment.

The purpose of these reforms were to improve the consistency, efficiency, timeliness and transparency of the APVMA's processes, to facilitate the ongoing registration of agvet chemicals, and to improve the transparency and predictability of the APVMA's decision making.

Sources: Australian Government (2015a); APVMA (2014a); DAFF (2011a, 2011b); DAWR (2015t); Gibbs, Harris-Adams and Davidson (2013); PC (2008b).

The time and cost required to achieve chemical registration

Many inquiry participants submitted that the process for registering agvet chemical was unnecessarily complex, time-consuming and expensive. For example, Voice of Horticulture said that it:

> … strongly supports the APVMA's current regulatory objective of ensuring that risks to human health, welfare of animals and trade from Agvet chemical use are kept within acceptable limits while facilitating user access to appropriate products. That said, Australia's chemical registration system is still too slow, complex and expensive that growers are being left without cost-effective alternatives to manage pests and diseases. There needs to be a major overhaul of our current system to improve chemical access. (sub. 42, pp. 9-10)

As a result of costly and time-consuming registration processes, chemicals may only become available in Australia several years after they are available overseas, or may not become available at all. AusBiotech provided the following case study.

> A major international vaccine manufacturer submitted a change of site of manufacture variation for a vaccine that had previously been sold in Australia. The vaccine for Bovine Ephemeral Fever virus is used in the northern regions of the cattle industry. After two years this submission had not been dealt with and all existing vaccine supplies had either been sold or reached their expiry date. This situation left the cattle industry exposed to this disease with no treatment available. Unfortunately this is not an isolated example and urgent reforms are needed within the APVMA. (sub. 20, p. 6)

The DAWR explained that a lack of access to agvet chemicals can result in:

> … Australian producers relying on older, less effective, or less tailored chemistries, where a chemical solution is not available at all. The costs of farm production for Australian chemical users are higher as a result. Limited chemical choice increases the risk of chemical resistance, increases reliance on chemistries developed before modern regulatory scrutiny, and increases the cost of pests and diseases through reduced yield and poorer crop and animal health. (2015x, p. 1)

The effect of a lack of access to agvet chemicals was also illustrated in interviews with farm businesses conducted by the Commission (box 6.13).

While there are many potential reasons for the APVMA's inefficiency, participants most frequently highlighted the lack of consideration of overseas evidence in the registration process, and the inability of the APVMA to meet its statutory timeframes.

Increasing the use of international evidence

According to inquiry participants, an important reason for the time and cost required to gain chemical registration is the lack of consideration of international evidence in registration processes. The Australian regulatory regime requires that chemicals are assessed and registered by the APVMA before they are used, even if they have previously been assessed and registered by an overseas regulatory authority.

Box 6.13 Case study: Chemical registration and missed market opportunities

The Commission interviewed a farmer who was sowing a winter crop of chickpeas in response to a doubling of world prices following repeated failures of south Asia's monsoon season. The farmer said that a sudden Australia-wide increase in demand had meant that stocks of the chemical approved to control a particular fungus in chickpea crops had run out, and that this meant he was exposed to the risk of an outbreak of this fungus wiping out his crop. While other chemicals were available for controlling the fungus, they were only approved for use on crops other than chickpea (including lentils, which are a close relative of chickpea).

According to the farmer, a major contributor to this problem was the lengthy and costly regulatory approval process for registering new applications of existing chemicals with the Australian Pesticides and Veterinary Medicines Authority. Australia's relatively small market means that the potential profits from obtaining costly regulatory approval in Australia often don't outweigh the costs.

Source: Productivity Commission case study interviews (appendix C).

The Northern Territory Department of Primary Industry and Fisheries said that:

> There is currently an unreasonable burden to both industries and manufacturers with subsequent delays from having to generate additional Australian research data for registration … The existing process is a brake to innovation and a drag on rural industry competiveness in international trade. (sub. 67, p. 2)

The Consolidated Pastoral Company also said that:

> In addition to the direct cost to pastoralists for agricultural and veterinary chemicals there is also a cost to business with new drugs that have been approved for use elsewhere, being forced to undergo a very long and expensive approval process by APVMA in Australia. (sub. 71, p. 37)

A farmer interviewed for this inquiry gave an example of where a lack of recognition of overseas testing contributed to a chemical being unavailable in Australia (box 6.14).

To reduce the time and cost of chemical registration, many participants advocated increasing the use of international evidence in the APVMA's processes (AHBIC, sub. 34; NTDPIF, sub. 67; Herta Klein, sub. 38; NFF, sub. 61). For example, the Australian Dairy Farmers submitted that:

> The dairy industry welcomes the use of international data, assessments, standards and decisions, where appropriate, to reduce the burden of regulation, particularly given Australia's position as a relatively small market for agvet chemicals. (sub. 63, p. 4)

The Australian Veterinary Association (sub. 26) also supported recognition of assessments conducted by trusted foreign regulators to speed up the process of bringing new medicines and chemicals to Australia.

Box 6.14 Case study: Lack of recognition of overseas tests

The owner and operator of a large horticultural business in south east Queensland told the Commission that, in Australia, it costs ten times what it does in the United States to register a new chemical, but for only one tenth of the market. He said that companies sometimes don't bring new chemicals to Australia due to the high cost. As an example, he pointed to a recently developed pre-emergent herbicide that could replace some older chemicals that are 'harsh' on microorganisms and fungi in the soil. The farmer told the Commission that this chemical has not been registered in Australia, but has been registered in New Zealand and is providing growers there with a competitive advantage over Australian growers.

The farmer attributes the cost of chemical registration in Australia to the stringent and detailed scientific testing administered by the APVMA. A frustration for the farmer is that the APVMA does not recognise testing already conducted overseas, such as in the United States or Europe, regardless of how stringent this is.

Source: Productivity Commission case study interview (appendix C).

The APVMA does take into account some international evidence in its registration processes (box 6.15). At the same time, it suggested that there are circumstances where it would not be appropriate or desirable to do so.

> The APVMA will not accept a decision from an overseas regulator as the sole justification for registering or cancelling a product or active constituent approval because risk management around use of a product may incorporate unique national legislative framework, regulatory environment and government policy elements … Each regulator must make decisions as per the criteria set out in the legislation of their jurisdiction … In Australia, the APVMA must consider state and territory legislation and control of use regimes, environmental protection regimes, adverse experience reporting mechanisms and food testing systems, which all contribute to and impact upon a regulatory decision. (APVMA 2015a, p. 12)

There is scope for the APVMA to increase its reliance on international evidence. The APVMA is currently considering a reform proposal that will allow agvet chemicals registered by two trusted international regulators to be registered in Australia without further assessment (DAWR 2015x). The international regulators would be prescribed in legislation, and would reflect those that undertake assessments with similar outcomes in risk management. The risks posed by the product would need to be equivalent in the two jurisdictions — that is, both the overseas and Australian product must have the same use pattern (host, pest and application rates), formulation and manufacturer. Consultation on this proposal closed in June 2016.

Greater use of international evidence by the APVMA can provide a range of benefits to farm businesses, including quicker access to agvet chemicals available overseas, and reduced regulatory costs through greater harmonisation with comparable overseas regulators. The Commission supports such an approach in principle. This approach is also consistent with the Australian Government's commitment not to impose any additional requirements on products that have been approved under a trusted international standard or risk assessment, unless there is a good reason to do so (Australian Government 2014b).

Box 6.15 The APVMA's use of international evidence

When approving and registering agvet chemicals, the APVMA considers four different types of international evidence — data, assessments, standards and decisions. Each of these are considered differently.

- *Data* — the APVMA accepts data generated according to a number of international guidelines, as long as they are relevant to the specific product and application for registration. Accepted data include those generated according to the OECD test guidelines, the Food and Agriculture Organization of the United Nations (FAO) and World Health Organization (WHO) guidelines, and the International Cooperation on Harmonisation of Technical Requirements for Veterinary Medicinal Products guidelines.
- *Assessments* — the APVMA accepts specific assessments if the data supporting them are made available. Accepted assessments include:
  - hazard assessments conducted by EU member states, Canada and New Zealand
  - risk assessments conducted by the FAO and WHO
  - risk assessments for products where the exposure assessment is comparable to one conducted by another regulator.
- *Standards* — the APVMA routinely uses international standards, including FAO standards and specifications, and international methodologies for exposure assessment.
- *Decisions* — the APVMA does not accept the decisions of international regulators. However, it accepts data, assessments and standards that contribute to a particular international decision.

Source: APVMA (2015a).

DRAFT RECOMMENDATION 6.2

The Australian Pesticides and Veterinary Medicines Authority should make greater use of international evidence in its assessments of agricultural and veterinary chemicals (including by placing greater reliance on assessments made by trusted comparable international regulators). Reforms currently underway in this area should be expedited.

Unmet statutory timeframes

The APVMA is required to finalise all agvet product evaluations within statutory timeframes. These vary from one to 18 months, depending on the type of application. For example, timeframes for applications to vary an approval or registration are generally shorter than for applications to approve a chemical or register a chemical product.

The APVMA has consistently failed to meet its statutory timeframes. The NFF said that:

> The Australian Pesticides and Veterinary Medicines Authority (APVMA) has a consistent track record of failing to meet set approval timeframes, and the uncertainty and expense of the

> approvals process acts as a deterrent to global chemical companies when assessing markets for new products. (sub. 61, p. 13)

APVMA performance statistics show that in the period from July to December 2015, only 64 per cent of applications were completed within legislated timeframes — significantly below the 100 per cent target. According to the APVMA, unexpectedly high levels of staff leave in the period contributed to this performance (2016a). However, CropLife Australia had a different view. It attributed the APVMA's poor performance to:

> … the Department of Agriculture and Water Resources' complete disregard for the impact of their previous reform agenda, developed between 2010 and 2014, on the APVMA. The transitional funding provided to the APVMA was also largely insufficient, particularly when a quarter of the amount provided needed to be paid back to the Department well before any efficiency could be realised. (2016, p. 1)

Unnecessarily lengthy timeframes for assessing agvet chemicals were previously raised as a concern by participants to the Commission's 2008 review of plastics and chemicals regulation (PC 2008b) and the Commission's 2008 annual review of regulatory burdens on business: manufacturing and distributive trades (PC 2008a).

There is some evidence that the APVMA's performance (in terms of the time it takes to complete an application) has improved over the past five years. A review by auditors external to the APVMA found that between the period 1 July 2011 to 30 June 2014 and 1 July 2014 to 31 March 2016, the average timeframe improved by 3.2 months (Oakton Accounting and Assurance 2016). The percentage of applications completed within the timeframe also increased from 33 to 69 per cent. However, the review noted a bias in the sample due to the small number of applications received for classes within the timeframe of greater than 6 months post 1 July 2014.

It is unclear whether the failure of the APVMA to meet its legislated targets is a result of insufficient consideration of overseas evidence, insufficient resourcing, unrealistic legislated timeframes, insufficient information provided by applicants, or some other reason, such as the APVMA taking an unnecessarily risk averse approach in its assessments. The Commission is seeking further information on whether there are aspects of the regulatory framework for agvet chemicals (including the associated institutional arrangements) that could be reformed to improve outcomes for agricultural producers and the community more broadly (discussed later).

Inconsistencies across states and territories in control-of-use regimes

As discussed above, states and territories are responsible for controlling the use of chemical products after retail sale. Control-of-use regimes differ across states and territories, and, in particular, there are differences in the rules for 'off-label' uses. Off-label use refers to when a chemical is used in a way other than what is stated on its APVMA-approved label. Labels can include instructions on the rate and frequency of application, and the types of crops on which the chemical can be used, among other things.

In some states such as Victoria, off-label uses are legal, subject to some restrictions (VDEDJTR 2015a). However in others such as New South Wales, off-label uses are generally illegal (NSW EPA 2013b).

CropLife Australia (sub. 14) argued that it is difficult, confusing and costly for its members to comply with multiple state and territory control-of-use requirements.

Concerns about inconsistencies in control-of-use regulations are not new. In 2008, the Commission found that there were significant differences in the content of state and territory regulations regarding off-label uses, and the licensing and training of pesticide applicators. In addition, there was variability in the monitoring and enforcement of these regulations (PC 2008b).

Concerns about control-of-use regulations were also highlighted in submissions to the Agricultural Competitiveness White Paper and the House of Representatives Standing Committee on Agriculture and Industry (HRSCAI) inquiry (Aerial Agricultural Association of Australia Ltd 2014; Agribusiness Yarra Valley 2015; King & Wood Mallesons 2014; Nufarm Limited 2014). For example, Agribusiness Yarra Valley submitted to the HRSCAI inquiry that:

> A long and continual discussion has been the issue of farm chemicals and the usage rules between states. It is a crazy system when a chemical can be used to treat a bug on one side of the Murray but not the other, or when a chemical can be used on a bug on one crop but not another. (2015, p. 3)

In its review of chemicals and plastics regulation, the Commission recommended moving to a national control-of-use regime for agvet chemicals (PC 2008b). A national regime was expected to overcome the fragmentation and inconsistency of state and territory laws, and improve the effectiveness of the National Registration Scheme in achieving consistent risk management outcomes across jurisdictions. The Commission recommended that the use of agvet chemical products be regulated by the APVMA, through the Agvet Code. At a minimum, such regulation would include uniform approaches to enforcing conditions of use on product labels, and the licensing and training of chemical users. The regime would be delivered by states and territories.

Following the Commission's recommendation, COAG directed the Standing Council on Primary Industries to develop a national framework — involving a regulatory model, funding model and an intergovernmental agreement — to improve the efficiency and effectiveness of the regulation of agvet chemicals (DAWR 2015b). The initial plan was that, following COAG agreement, implementation of the proposed models would take approximately 18 months.

While the regulatory model, funding model and intergovernmental agreement have been developed, there has been a lack of progress in their implementation. Queensland's Department of Agriculture and Fisheries said that it:

> … is concerned that the process has slowed in recent times. (sub. 58, p. 4)

The Aerial Application Association of Australia also asserted that:

> COAG processes for the reform of chemical control-of-use regulation have all but ground to a halt. (sub. 12, p. 1)

The proposed scheme may also not fully address concerns about differences in allowable off-label uses. The scheme harmonises some elements of off-label uses (for example, registered pesticides can be applied to approved crops at a lower rate), but allows states and territories to have varying off-label use provisions to respond to regional needs (Tim Harding and Associates and Rivers Economic Consulting 2013). ABARES suggested that this minimal harmonisation means inconsistencies between jurisdictions are likely to remain (Gibbs, Harris-Adams and Davidson 2013).

The Commission agrees that where there are clear and demonstrated regional differences, regulatory frameworks should retain flexibility to address them. However, in relation to control-of-use regulations for agvet chemicals, in 2008 the Commission found that:

> … much of the need for flexibility derives from differences in environments that do not correspond to state and territory borders and therefore, there is no justification for retaining these jurisdiction-specific regulatory approaches. (2008b, p. 226)

The Commission considers that there is scope to increase the harmonisation of off-label uses as part of the proposed reforms, and governments should pursue this goal without delay. In addition, work on implementing the national control-of-use regime should progress more rapidly with a firm commitment from all jurisdictions. States and territories should aim to have the regime in place by the end of 2018, ten years after the Commission's review of plastics and chemicals regulation. The lack of progress thus far has been disappointing.

DRAFT RECOMMENDATION 6.3

The Australian, state and territory governments should expedite the implementation of a national control-of-use regime for agricultural and veterinary chemicals (which includes increased harmonisation of off-label use provisions), with the aim of having the regime in place in all states and territories by the end of 2018.

Access to agvet chemicals for minor uses

For some low-volume use chemicals, the registration and assessment costs outweigh the benefits of commercialising new products. This can discourage businesses from registering new agvet chemicals in Australia. However, where agvet chemicals are not registered, access may still be permitted for 'minor uses' through the minor use permit system.

Several participants said that the minor use permit system benefits farm businesses by allowing them to use agvet chemicals without incurring the full costs of registration (AFPA, sub. 11; VOH, sub. 42). Agforce said that:

> The [minor use] permit system provides agriculture, local government and others with options to control new emerging pests, diseases and weeds that are not currently on pesticide labels. Niche agricultural products can also acquire minor use permits for their unique situation. AgVet chemical companies rarely update pesticide labels as there is a huge associated cost. Minor use permits fill this gap. (sub. 17, p. 7)

Even so, some participants pointed to a lack of approved crop protection products for minor uses, and identified a need to streamline registration and approval of minor uses (Australian Forest Products Association, sub. 11; NFF, sub. 61; Primary Producers SA, sub. 41). For example, the Australian Forest Products Association said that:

> Further reform of agvet chemical regulation including … Streamlining of the minor use permit approval process and red-tape reduction is needed. (sub. 11, p. 10)

Similarly, the NFF recommended that the Australian Government:

> … proceed with efforts to streamline the regulatory framework surrounding registration and use of agricultural and veterinary chemicals. (sub. 61, p. 13)

Of those submissions addressing the minor use permit system, the majority called for further government funding to support a minor use program and to facilitate access to minor use chemicals (NFF, sub. 61; NSW Farmers, sub. 72; Voice of Horticulture, sub. 42). However, the issue of whether these measures are adequate is beyond the scope of this inquiry, as it relates to government initiatives and funding to support the agricultural sector, rather than regulatory burdens. The Commission also notes that the Rural Industries Research and Development Corporation is hosting a project to increase access to chemicals for minor uses (RIRDC 2016), and that as part of the 2014-15 budget, the Australian Government provided $8 million over four years to improve access to minor use chemicals (Treasury 2014a).

Labelling of agvet chemicals under work health and safety regulations

Agvet chemical labels are approved by the APVMA, and reflect the risk of the product (as assessed by the APVMA) when it is used according to its approved use. Currently, agvet chemicals are exempt from labelling requirements under work health and safety regulations. The exemption was granted because it was previously considered that the regulatory framework for agvet chemicals (including APVMA-approved labels) adequately protected the health and safety of workers (Access Economics 2010).

However, from 1 January 2017, the exemption will be discontinued, and agvet chemicals used in the workplace will be required to be labelled in accordance with the GHS. This requirement is in addition to APVMA requirements, and is part of broader reforms that will require GHS labelling for all workplace hazardous chemicals in most states and

territories (Safe Work Australia 2016a). The inclusion of agvet chemical labels as part of these reforms follow several adverse incidents involving chemicals that were not labelled according to the GHS (box 6.16).

Box 6.16 Incidents resulting from the absence of GHS labelling on agvet chemical labels

During Senate Estimates in February 2016, Safe Work Australia (SWA) was asked to confirm that the additional requirement to label agvet chemicals according to the Globally Harmonised System of Classification and Labelling (GHS) was not prompted by any worker incident.

The question was taken on notice, and SWA's written response referred to several incidents where the absence of GHS labelling resulted in harm to the community. SWA said that:

> In their response to the 2006 Consultation Regulatory Impact Statement for the hazardous chemicals framework, WorkCover NSW highlighted several agricultural chemical incidents where APVMA approved labels were identified as not communicating the hazard which resulted in the incident, including a fatality caused by the use of carbon disulphide as a grain fumigant. The APVMA label contained no information about the flammability of this chemical.
>
> A recent incident involving a herbicide called 'Hotshot' has also highlighted inadequate labelling. The health hazards which resulted in the hospitalisation of a bystander were not communicated on the APVMA label. These hazards would have been communicated on a GHS label. (Safe Work Australia 2016b, p. 1)

APVMA-approved labels do not contain information about all of the intrinsic hazards of a chemical product, but are based on the APVMA's assessments of risk to the end user (Access Economics 2010; Safe Work Australia 2016a). Where the APVMA has assessed that the risk of a particular hazard being realised is mitigated by the inclusion of safety directions, information about intrinsic hazards may not be required (Access Economics 2010).

By contrast, the GHS requires all intrinsic hazards to be communicated. Because information about hazards is independent of any assessment of risk, GHS labelling allows workplaces along the supply chain to conduct their own risk assessments to protect worker health and safety. Access Economics said that:

> … the absence of hazard information on labels could prevent a workplace from undertaking an acceptable statutorily-required workplace risk assessment, as this relies on the identification of applicable hazards, or to implement appropriate risk controls. (2010, p. 16)

Industry groups do not consider that the new arrangements will improve worker safety, and expressed the view that the additional requirements are costly and unnecessary (Bettles 2016). CropLife Australia submitted that:

> Compliance with two separate sets of fundamentally conflicting regulations is not only costly for manufacturers, just one of our member companies expects the cost of compliance with the extra regulation to be in excess of $800,000, but it is likely to confuse users and subsequently threaten worker health and safety. (sub. 14, p. 17)

Animal Medicines Australia said that GHS labelling requirements:

> … impose an unnecessary regulatory burden that contributes nothing to worker health or safety. The provisions should be amended to recognise that the APVMA labelling process achieves the purported aims of the GHS. (sub. 52, p. 10)

And the NSW Farmers' Association said that the new requirements will:

> … create unnecessary red tape resulting in unnecessary expense that will be borne by farmers … GHS hazard statements may reflect hazards that are of negligible risk. (sub. 72, pp. 14-15)

To discuss these concerns and the implementation of the reforms going forward, a meeting between Safe Work Australia members and representatives from the agvet chemical industry has been scheduled for August 2016 (Safe Work Australia, pers. comm., 24 May 2016). Actions have also been taken to mitigate the cost of the forthcoming changes, including:

- a five year transition period, which commenced in January 2012 (APVMA 2014b)
- a partial exemption from GHS labelling requirements, which applies where the information required by the GHS is already required by the APVMA. The only additional labelling requirements will be GHS hazard and precautionary statements. (Safe Work Australia 2016a)

In addition, the DAWR has initiated an external review that will focus on the potential duplication of effort and unnecessary costs associated with agvet chemicals having to comply with both agvet chemical legislation and work health and safety legislation (DAWR 2016s). The review will identify options to streamline and improve the current regulatory approach, and make recommendations for preferred options. It will include public consultation and is scheduled to be completed by mid-November 2016.

Work is underway to streamline the regulation of agvet chemicals

The Australian Government reiterated its commitment in the Agricultural Competitiveness White Paper (2015a) to improve access to agvet chemicals while maintaining adequate protections for the health and safety of people, animals and the environment. To that end, the DAWR is considering a range of reforms to improve the efficiency and effectiveness of the agvet chemical regulatory system and improve access to agvet chemicals. It conducted several rounds of consultation in 2014 and 2015 to identify the main issues, and recently published a series of discussion papers, each examining a specific area of reform. The papers covered:

- the use of overseas decisions as basis for registration
- the scope of agvet chemical regulation
- the removal of efficacy and trade assessments
- crop grouping

- contestable provision of assessment services
- the streamlining of import and export regulation
- the APVMA CEO as a poisons scheduling delegate
- outstanding issues with legislation. (DAWR 2016t)

Progress in each of these areas vary. For example, in relation to using overseas decisions as a basis for registration, the DAWR (2016t) stated that 'the APVMA is finalising its policy on the use of international data, guidelines and standards'. In relation to revising the scope of products, the APVMA is currently implementing reforms (DAWR 2016t).

The APVMA noted that some reforms can be applied without the need for legislative change. This includes:

- better profiling of applications and the risks involved and establishing faster pathways to register products or make variations, including through on-line self-assessment, notifiable variations and compliance with standards
- increasing the use of assessments conducted by comparable regulators both domestically and internationally
- aligning technical guidelines and guidance material to those agreed internationally through recognised forums such as the OECD, [the International Cooperation on Harmonisation of Technical Requirements for Veterinary Medicinal Products] and [the Codex Alimentarius], and
- seeking efficiencies in process through more contestable provision of assessment services and streamlining internal business processes to speed up the assessment of applications. (sub. 21, p. 1)

However, other reform measures, such as establishing a co-regulatory system for agvet chemical use, are longer-term propositions (DAWR 2016t).

Better implementation of reforms is required

While the Commission acknowledges that the Government (through, for example, the APVMA and the DAWR) has sought to reform the complex regulatory framework for agvet chemicals, progress has been patchy and slow. In some cases, industry groups argued that reforms worsened their regulatory experience. For example, pre-application assistance arrangements were recently changed to better manage requests for assistance and better meet the needs of industry. Citing a report by ACIL Allen Consulting (2015), AusBiotech commented that:

> … when the performance of the [Pre-Application Assistance] was reviewed none of the veterinary industry participants indicated that they were satisfied with the administrative requirements, timeliness, cost or quality of the response they received. In fact they felt that the new arrangements provided a lower level of service that what was available before 1 July 2014. While Industry was encouraged by the APVMA's willingness to respond to its needs, its execution of these changes fell well short of industry expectations … (sub. 20, p. 6)

More broadly, while CropLife Australia was supportive of the APVMA's efforts to improve its processes, it was critical of the role of the DAWR.

> … the APVMA has implemented a range of significant administrative and operational efficiency initiatives that CropLife is optimistic will deliver some regulatory efficiency … It's about time the Department of Agriculture and Water Resources stops being an inhibitor to real efficiency reform and starts showing a similar willingness to deliver on the Minister's own drive and commitment to regulatory efficiency. (2016, p. 1)

The NFF also contended that:

> Poorly managed processes and a lack of strategic vision has led to confusion and additional burden on the agricultural sector, without improved outcomes for human safety, the environment or farm input costs. (sub. 61, p. 13)

Limited capacity for the APVMA to reform its processes was also identified by Hills Orchard Improvement Group in a submission to the Commission's 2013 study on regulator engagement with small business.

> The APVMA has demonstrated that it has inadequate capacity for reform, despite all of the reform initiatives that the APVMA itself has identified, or have been identified by Veterinary Chemicals Producers, other industry associations, the Australian National Audit Office and the Productivity Commission. (2013, p. 18)

Reforms to improve the regulation of agvet chemicals therefore remain a major work in progress. And, while adoption of the recommendations outlined in this chapter are expected to improve outcomes for farmers and the broader community, there is a question as to whether more fundamental reforms are required to achieve further gains.

6.3 Is there scope for more significant reform?

As discussed throughout this chapter, participants identified several sources of unnecessary regulatory burdens relating to technologies and agvet chemicals, many of which appear to be unrelated. These include:

- lack of coordination or consistency between jurisdictions
- the length and cost of approval and registration procedures
- the slow pace of implementing regulatory reforms
- duplication of approval and registration procedures between and within agencies.

On the available evidence, the Commission found it difficult to determine whether these issues are best addressed separately through a series of smaller regulatory adjustments (as proposed earlier in this chapter), or whether there is an underlying cause that also needs to be addressed. For example, if the broad regulatory framework for GM technology and agvet chemicals has not kept pace with advances in science and community understanding of these issues, this could be contributing to an overly risk averse regulatory approach.

This could lead to regulations that are disproportionate to the risk that the regulated activity poses, adding to costs and contributing to delays in the availability of technologies and chemicals for farm businesses.

The Commission is seeking feedback on the performance and appropriateness of the broad regulatory arrangements relating to access to technologies and agvet chemicals, especially in light of evolving scientific and other evidence.

INFORMATION REQUEST 6.1

How well does the regulatory framework for technologies and agvet chemicals perform? Are the institutional arrangements and regulatory objectives underpinning the OGTR and APVMA appropriate and up to date? What improvements could be made?

7 Biosecurity

Key points

- Australia's biosecurity system is critical to maintaining the competitiveness of the agricultural sector. The entry of serious exotic pests, weeds or diseases into Australia would have a major impact on Australian farmers (including loss of agricultural production and access to premium export markets), the environment and the broader community.
- Biosecurity is a shared responsibility between governments, industries and the community.
  - The Australian Government manages biosecurity risks pre-border and at-the-border (including quarantine). It also coordinates responses to outbreaks within Australia.
  - The states and territories are mainly responsible for managing risks post-border. This largely involves surveillance and diagnostics.
  - Farm businesses comply with biosecurity regulations including, for example, fumigating crops, controlling weeds, and treating infected animals, and contribute to broader measures by industry such as responses to outbreaks.
  - The community plays a role in alerting authorities to biosecurity risks.
- The *Biosecurity Act 2015* (Cwlth) took effect on 16 June 2016, replacing the *Quarantine Act 1908* (Cwlth). The new Act introduced approved arrangements which should reduce agricultural businesses' compliance costs by streamlining the process they must follow to obtain approval to self-monitor biosecurity risks.
- Import risk assessments evaluate the biosecurity threat of an import against the broader benefits to the community. The main concerns around the assessments are transparency. The Australian Government has sought to address this issue through the development of Biosecurity Impact Risk Analyses (BIRAs), which took effect with the commencement of the Biosecurity Act.
- Biosecurity requirements vary from state to state reflecting different risks (and therefore priorities). Different biosecurity arrangements across jurisdictions can be burdensome for farmers and add to their business costs, particularly when transporting goods and accessing markets in other states.
- While some differences in biosecurity requirements across jurisdictions may be justified based on state- or territory-specific risks, better coordination across jurisdictions could harmonise requirements, reducing the burden on businesses. Significant progress has been made towards a more co-ordinated approach, including through the Intergovernmental Agreement on Biosecurity, and the establishment of the National Biosecurity Committee. The current review of the agreement will look at the effectiveness of the agreement and avenues for improvement.
- Trespass on farms is unlawful and can lead to biosecurity risks. One way of reducing trespass is to remove the motivation for it. The Commission is interested in any strategies that could be used to discourage farm trespassing and lessen biosecurity risks.

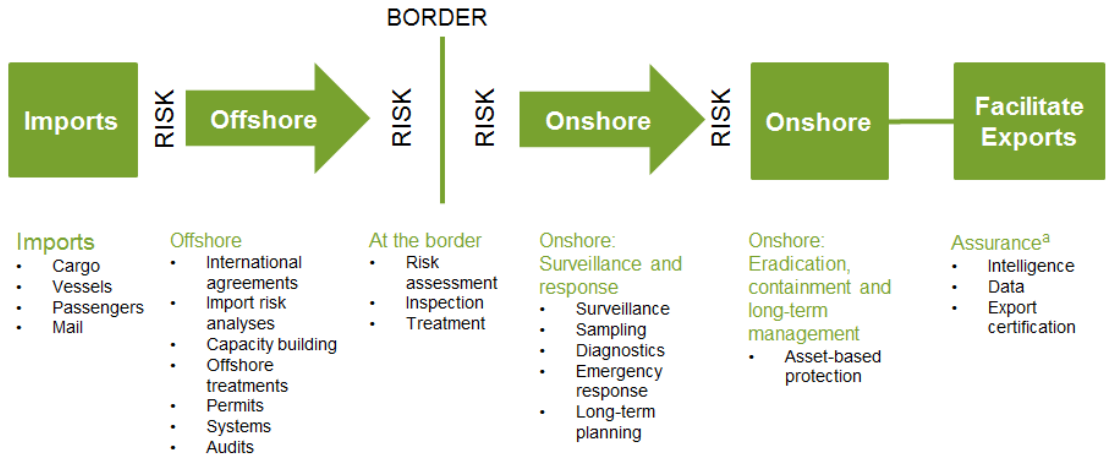
7.1 Australia's biosecurity arrangements

Biosecurity is about managing the risks of entry, establishment and spread of pests, diseases and weeds that could pose a threat to animal, plant or human health or the environment (Australian Government 2015a). Effectively managing these risks is important not only for agriculture industries, but also for protecting the environment, the community and economy.

Exotic pests, diseases and weeds can enter Australia via passengers, mail, air and sea cargo or by natural sources (such as wind or migrating birds). In its 2014 report, *Australia's Biosecurity Future: preparing for future biological challenges*, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) highlighted a number of trends — such as increased movement of people and goods, urbanisation and agricultural intensification — that are placing Australia's biosecurity system under increasing pressure (box 7.1). An expansion of agriculture in Northern Australia is also expected to increase biosecurity threats, because of the proximity of neighbouring countries and different ecoclimatic conditions in the north, (Australian Government 2015d).

Biosecurity risks are managed offshore, at the border and onshore, mainly by the Australian and state and territory governments (figure 7.1).

Figure 7.1 **Australia's biosecurity system**



a Export regulation is discussed in chapter 13.

Source: Australian Government (2014a).

Box 7.1 Emerging challenges for biosecurity

Australia's geographic isolation provides protection from many external threats. However, a CSIRO report (*Australia's Biosecurity Future: preparing for future biological challenges*) highlighted a number of trends that are likely to place pressure on Australia's biosecurity system.

- *Increased movements of vessels, aircraft, people and goods across our border from a wider range of countries and regions* — increased global trade and travel will create new opportunities for pests and diseases to enter and spread across Australia.
- *Agricultural expansion and intensification* — biosecurity will become increasingly important as agriculture expands and intensifies to meet rising global food demand. For example, while larger farming operations can generally better manage biosecurity risks compared to smaller operators (in part because they are better informed and benefit from economies of scale), the trend towards them may still require more stringent biosecurity practices due to factors such as the larger amounts of waste that they produce.
- *Urbanisation and changing consumer expectations* — urban encroachment and peri-urbanisation create new biosecurity challenges (lifestyle farmers often have lower levels of knowledge about biosecurity risks and may be less likely to maintain good biosecurity standards), as do other changes in farming practices, such as organic farming and free-range poultry (free-range production systems can pose an increased biosecurity risk as the birds have greater exposure to wild birds that carry disease).
- *Biodiversity pressures* — the significance of biosecurity threats relating to declining biodiversity, redistribution of species and declining agricultural biodiversity will become clearer over the coming decades.
- *Declining resources* — declining human resources with biosecurity expertise and less biosecurity investment (with tighter government budgets) means improving the efficiency of biosecurity management will be a growing challenge.

Agricultural expansion in Northern Australia is also likely to generate new biosecurity risks. As discussed in the Australian Government's white paper on northern Australia, the north's proximity to international neighbours, extensive coastline and sparse population make it particularly vulnerable to biosecurity threats, with most of Australia's biosecurity outbreaks in the past ten years occurring there. The growth of agriculture, mining and tourism industries increases links with the rest of Australia, and with that the probability of a pest or disease spreading to other regions.

Sources: Australian Government (2015d), Simpson and Srinivasan (2011).

Who is responsible for what?

The Australian Government is responsible for biosecurity activities offshore and at the border. Key activities include:

- providing information overseas about Australia's biosecurity arrangements
- conducting quarantine inspections and treatments overseas and at the border
- certifying and permitting goods to enter Australia.

The Australian Government also has a role in emergency responses to disease outbreaks through arrangements with industry such as the Emergency Plant Pest Response Deed, the Emergency Animal Response Agreement and the National Environmental Biosecurity Response Agreement (NEBRA) (COAG 2012b; DLA Piper Australia 2016a, 2016b). These arrangements outline emergency responses and cost-sharing principles, and complement the activities of state and territory governments in managing biosecurity risks within Australia's borders.

The state and territory governments are mainly responsible for onshore activities including monitoring goods transported into the state or territory (in part to monitor for nationwide threats but also to look for state-based threats).

The states and territories audit and inspect farm businesses for compliance with state-based biosecurity regulations (and some federal regulations). They also provide input to Australian Government activities such as import risk assessments and responses to outbreaks. (Import risk assessments involve evaluating the biosecurity threat of an import against the broader benefits that the good can provide the economy and community.)

The Intergovernmental Agreement on Biosecurity (IGAB) identifies the biosecurity roles and responsibilities across the Australian and state and territory governments (except the Tasmanian Government) (COAG 2012a). The agreement is aimed at strengthening the working partnership between the Commonwealth, state and territory governments, and improving the national biosecurity system. The National Biosecurity Committee has been set up to implement collaborative projects to meet the national priorities identified in the IGAB (box 7.2).

Local governments play a role in regional emergency pest and disease responses, and are also responsible for municipal services such as disposal of biosecurity waste material (Beale et al. 2008). Some states' and territories' biosecurity regulations also have specific requirements for local governments — for example, NSW's legislation, the *Biosecurity Act 2015* (NSW) requires local governments to manage biosecurity risks posed by weeds.

While governments play a major role in carrying out biosecurity activities, biosecurity is also the responsibility of industries, businesses and the wider community. Industries play an important role in biosecurity risk management by reporting biosecurity risks that may threaten their businesses (they often benefit from this so have an incentive to do so). Government–industry partnerships, such as Animal Health Australia and Plant Health Australia, facilitate a national approach to enhancing Australia's management of established pest and diseases. A number of industries are signatories to the animal and plant emergency deeds and share in the costs of emergency measures when they arise.

Box 7.2 Instruments to facilitate a working partnership on biosecurity

The Intergovernmental Agreement on Biosecurity (IGAB)

The IGAB is an agreement between the Commonwealth and the state and territory governments, except Tasmania. (Tasmania preferred to retain the ability to determine its own import requirements for produce entering from other states (Klumpp 2014)) The agreement, which came into effect in January 2012, aims to strengthen the working partnerships between governments and to improve the national biosecurity system and minimise the impact of pests and diseases on Australia's economy, environment and the community. The IGAB identifies priority areas for collaboration which include:

- consistent decision-making on investments
- better sharing and collecting of data
- coordinated surveillance of pests and diseases.

The first deliverable under the IGAB was the National Environmental Biosecurity Response Agreement which sets out emergency response arrangements, including cost-sharing arrangements, for responding to biosecurity incidents that primarily affect the environment and/or social amenity and where the response is for the public good.

Governments have also established the National Surveillance and Diagnostics Framework, which aims to integrate funding and management of these activities across jurisdictions.

The Australian Government is reviewing the IGAB to assess its implementation and the effectiveness of its schedules. The review will also consider the capacity of the national biosecurity system, and the suitability of the agreement to manage increased biosecurity risks going forward. The existing cost-sharing arrangements and the potential for implementation of new funding arrangements for all biosecurity will also be considered. The review's draft report is due in late 2016.

The National Biosecurity Committee

The IGAB formally established the National Biosecurity Committee (NBC). The NBC identifies and implements collaborative projects between governments that meet the IGAB's priorities. The NBC provides advice to the Agriculture Senior Officials Committee and the Agriculture Ministers' Forum on national biosecurity and on progress in implementing the IGAB.

The NBC is supported by sectoral committees covering animal and plant health, invasive plants and animals, and marine pests. These sectoral committees provide policy, technical and scientific advice to the NBC.

Sources: COAG (2012a, 2012b); DAWR (2014, 2016n, 2016q).

Some industries have recognised that effective pest and disease management is in their interest and have coordinated industry-specific actions to manage biosecurity (one example is the cherry industry, box 7.3). Businesses also comply with biosecurity regulations including, for example, fumigating crops and treating infected animals.

Box 7.3 Australian Cherry Industry Biosecurity Management Programme

Australian cherries are exported to more than 20 countries. Around 20 per cent of cherries are exported, and the Australian cherry industry is looking to increase the export share. To help achieve this, the industry's peak body Cherry Growers Australia is developing a Biosecurity Management Programme aimed at providing confidence to all international markets that Australian cherries meet international quarantine requirements, and are of high quality.

The draft programme includes a full spectrum of management and quality principles in cherry production, pest and disease management, research, education, training and market access. These include:

- developing early warning systems to detect pests and diseases
- implementing a nationwide crop monitoring database to immediately highlight or detect any emerging pest issues
- providing regular training and education for all growers on biosecurity and good practice
- identifying future risks associated with climate change and shifts in the types of pests and diseases affecting the industry.

Sources: Cherry Growers Australia (2015, 2016).

The community plays a role in alerting authorities to, and managing, biosecurity risks. As the discussion paper for the review of the IGAB said:

> Community understanding and acceptance of biosecurity risk is critical to the sustainability and operation of the national biosecurity system. Australian governments and industry work together to help the broader community, which includes landholders, travellers, scientists and non-government organisations, understand what biosecurity means for them so as to encourage participation and confidence in the national biosecurity system. (Craik, Palmer and Sheldrake 2016, p. 19)

The importance of community efforts has been recognised in fruit fly eradication programs — in Mildura and Swan Hill fruit fly trap kits were distributed to households to help manage pest control efforts (ABC 2015b).

Industry groups, universities, and research organisations also contribute to the knowledge base around the risks from pests or diseases.

Regulations covering Australia's biosecurity arrangements

Australia's primary piece of legislation for biosecurity (the *Quarantine Act 1908* (Cwlth)) was replaced by the *Biosecurity Act 2015* (Cwlth) (the Biosecurity Act) on 16 June 2016. The Act details the biosecurity arrangements administered at the national level.

Each state and territory has its own legislation (table 7.1). New South Wales and Queensland have recently passed new biosecurity acts and Tasmania is looking to develop a new biosecurity act (TDPIPWE 2016b).

Table 7.1 **State and territory main biosecurity legislation**

State/Territory	*Legislation*
New South Wales	*Biosecurity Act 2015*[a]
	Animal Diseases and Animal Pests (Emergency Outbreaks) Act 1991
	Non-Indigenous Animal Act 1987
	Noxious Weeds Act 1993
	Plant Diseases Act 1924
	Stock Diseases Act 1923
Victoria	*Livestock Disease Control Act 1994*
	Livestock Management Act 2010
	Plant Biosecurity Act 2010
	Catchment and Land Protection Act 1994
Queensland	*Biosecurity Act 2014*
South Australia	*Plant Health Act 2009*
	Livestock Act 1997
	Natural Resources Management Act 2004
Western Australia	*Biosecurity and Agriculture Management Act 2007*
Tasmania	*Animal Health Act 1995*
	Plant Quarantine Act 1997
	Seeds Act 1985
	Weed Management Act 1999
	Vermin Control Act 2000
Northern Territory	*Plant Health Act 2008*
	Livestock Act
	Weeds Management Act
Australian Capital Territory	*Plant Diseases Act 2002*
	Pest Plants and Animals Act 2005
	Animal Diseases Act 2005

a The *Biosecurity Act 2015* (NSW) is expected to take effect in 2017 and the other legislation will be repealed at that time (NSW DPI 2015a).

Several international agreements underpin Australia's biosecurity arrangements.

- The World Trade Organization's (WTO) *Agreement on the Application of Sanitary and Phytosanitary Measures* (SPS Agreement) defines the concept of an 'appropriate level of protection' (ALOP) as the level of protection deemed appropriate by a WTO Member establishing a sanitary or phytosanitary measure to protect human, animal or plant life or health within its territory (WTO 2015). Members are required to take into account the objective of minimising negative trade effects. Australia can face trade-related sanctions for not meeting the Agreement's requirements.[15]

15 While several countries have complained to the WTO about Australia's import requirements, none have resulted in trade-related sanctions (WTO 2016). In most cases, Australia reached an agreement with the other country, which may have involved relaxing its requirements. A notable example is Canada's complaint in 1995 against Australia for prohibiting imports of fresh, chilled and frozen Canadian salmon (Beale et al. 2008). Australia revised its measures after the WTO Appellate body found Australia's assessment of the salmon's biosecurity risk did not conform to the SPS Agreement.

- The Food and Agriculture Organization's *International Plant Protection Convention* establishes international standards on using phytosanitary measures to protect plant health (IPCC 2016).
- The World Organisation for Animal Health has international standards relating to animal health and zoonoses (which are diseases that can be passed on to humans from animals), and the SPS Agreement encourages signatories to base their sanitary measures on the World Organisation for Animal Health's standards (OIE 2016b).
- The United Nations' *Convention on Biological Diversity* (Biodiversity Convention) guides regulations on conserving diversity within species, between species and of ecosystems (United Nations 1992).
- The World Health Organization's *International Health Regulations* guide regulations around public health risks that can threaten people worldwide (WHO 2005).

Australia's ALOP is expressed as 'providing a high level of sanitary and phytosanitary protection aimed at reducing risk to a very low level, but not to zero' (DAWR 2016b).

The *Biosecurity Import Risk Analysis Guidelines 2016* describe the process that the Department of Agriculture and Water Resources (DAWR) follows in assessing proposals to import animals, plants and/or other goods (DAWR 2016g). In conducting risk assessments, DAWR takes into account:

- the potential damage in terms of loss of production or sales in the event of the entry, establishment or spread of a pest or disease in the territory of Australia
- the costs of control or eradication of a pest or disease
- the relative cost-effectiveness of alternative approaches to limiting risks.

Live plants and animals, and associated reproductive material, must also be listed as an approved type under the live import list according to the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) before they can be imported (Department of the Environment 2016). The Department of the Environment approves changes to the live import list for animals, while DAWR does the same for plants.

Biosecurity arrangements are also shaped by regulations in other areas of policy such as food safety (chapter 9) and export certification (chapter 13).

Past reviews

The most recent comprehensive review of biosecurity and quarantine arrangements was the Beale Review (2008).[16] This review recommended wide-ranging reforms and many of the

[16] In 2012, the Senate Rural and Regional Affairs and Transport Committee looked at the adequacy of biosecurity arrangements, and progress in the implementation of the Beale Review's recommendations (SRRATRC 2012). The Senate Committee's recommendations include prioritising the Beale Review's reforms, and improving transparency around the import risk assessment process.

reforms have been implemented, including the new Biosecurity Act, the intergovernmental agreement on biosecurity across governments, and the National Biosecurity Committee.

The review advocated for a shift towards a more national approach to biosecurity to improve the implementation of biosecurity activities, particularly surveillance and diagnostics, and to help ensure jurisdictions' requirements accurately reflect biosecurity risks. It also recommended developing a list of national priority pests and diseases on the basis of the likelihood of incursion and its impact.

An earlier review of biosecurity — *Australian Quarantine: a shared responsibility* (Nairn et al. 1996) — introduced the framework of addressing biosecurity risks pre border, at the border and post border. The Nairn report also promoted biosecurity as a shared responsibility between Australian and state governments, businesses and the general community, which is an underpinning principle of the new Biosecurity Act.

More targeted reviews have looked at specific aspects of the biosecurity system, and the system's response to outbreaks. For example, Matthews (2011) looked at Australia's preparedness for a foot-and-mouth disease outbreak. The review led to the development of the National Foot-and-Mouth Disease Action Plan by the National Biosecurity Committee, and the establishment of the Foot-and-Mouth Disease Taskforce (DAWR 2015a).

The Agricultural Competitiveness White Paper and the White Paper on Developing Northern Australia also outlined government initiatives to spend $200 million to improve biosecurity surveillance and analysis to better target critical biosecurity risks (including $12.4 million for Indigenous Ranger groups in northern Australia) (Australian Government 2015a, 2015d).

7.2 Why are governments involved in biosecurity?

Biosecurity has both public good properties and spill-over effects (or externalities). A pest- and disease-free environment is a public good. If providing such an environment was left to the private sector, this could lead to free-riding on the management efforts of others and result in underinvestment in biosecurity activities. This failure of the market to adequately address pest and disease risks is a reason for government involvement in biosecurity. Also, while some pests and disease can be effectively managed property to property, others can only be managed with a co-ordinated approach. For example, biosecurity arrangements involve international negotiations, liaisons and coordination to develop conditions of entry into Australia.

However, many areas of biosecurity have elements of both public good (or spill-overs) and individual gain. For example, while farmers often have an incentive to undertake biosecurity activities to protect their own crops, flocks and herds, the benefit of these activities accrues to both individual farmers, other landholders and the broader community.

Farmers also benefit from a pest- and disease-free environment and effective surveillance and monitoring.

The efforts of individual farmers can also be undermined when other landholders fail to prevent, manage or eradicate biosecurity threats. Threats which are present in residential or community areas can spread to agricultural land, and affect crops and herds. This could include, for example, farmers abandoning their land yet leaving threats in place such as poorly managed vineyards.

When should governments be involved?

The extent to which governments are involved in biosecurity arrangements should depend on the extent of the failure of the market to manage pest and disease risks (and the potential benefits to the community of government intervention). There is also a strong case for government intervention where the benefits of a service are spread throughout the community and it is difficult to identify individual beneficiaries. An example is biosecurity arrangements at the border, which benefit the entire community. The market will not adequately provide such a service, and while the community can collectively benefit from the service, community members have little incentive to coordinate. Governments also have the regulatory authority to compel other parties to comply with arrangements.

Where biosecurity measures affect a limited set of people, governments can play a lesser role. Industry or individual farmers, for example, can be motivated to coordinate, fund and provide biosecurity measures when the benefits are limited to those carrying out the measure. Examples include the cherry industry's biosecurity plan to improve its access to export markets (box 7.3) or a farmer protecting machinery from damage caused by fire ants. However, in some of these cases, governments can share responsibilities with industry when it is better at coordinating stakeholders, or when the measure also affects the community more generally.

7.3 Benefits and costs of biosecurity

Biosecurity activities confer benefits on the community, the environment and economy. The community is protected from harmful diseases (some animal diseases are zoonotic and can affect human health) and the natural environment is conserved, ensuring native plants and animals are not threatened. Examples of biosecurity risks include avian flu, a virus that affects poultry and can affect humans, and red imported fire ants which can harm native plants and animals while also destroying agricultural machinery and being a nuisance to animals and people.

As an island nation, Australia is free of many of the pests, diseases and weeds that are found in other parts of the world. The South Australian Government described Australia as

having ‘an enviable pest and disease free status’ when compared to many of our trading partners (sub. 57, p. 25).

A robust biosecurity system benefits Australian farmers by protecting Australia’s reputation for quality and safe produce (and so is important for safeguarding access to export markets). For example, Australia’s foot-and-mouth disease free status has helped it maintain access to premium markets for red meats (where prices are significantly higher than for meat products originating from countries where the disease is endemic) (Hafi et al. 2015). Also, the quarantine conditions that Japan and Korea put on cherries mean that only growers in Tasmania can meet them (Australian Government 2015a).

Keogh and Goucher suggest that biosecurity arrangements will become more valuable to Australian farmers:

> As Australian agriculture transitions from being a supplier of bulk agricultural commodities towards being a preferred supplier of safe and high quality consumer products, the risks associated with a breakdown in Australian biosecurity systems become much greater. (2016, p. 1)

Farming yields can be higher because fewer crops and livestock are affected by pests and diseases, and farmers’ production costs are lower because fewer pesticides and veterinary services are required. A recent ABARES report found that Australia’s biosecurity system improves the annual profits for the average farm by between $12 000 to $17 500 a year (box 7.4).

Consumers also benefit from an effective biosecurity system. A study by ABARES looking at the potential impacts on horticulture from exotic fruit fly found that some of the increases in farmers’ production and marketing costs were transferred to consumers through higher average market prices for horticultural products across Australia (Hafi et al. 2013). Market prices fell with the implementation of the Torres Strait Fruit Fly Strategy, which involves detection of, and response to, fruit fly incursion in Torres Strait islands before they enter the mainland.

However, making import regulations more stringent may reduce biosecurity risks, but can also increase the cost of imported inputs (such as animal feed or new crop species) and consumer prices which in turn can protect local industry from overseas competition. As Beale et al. said:

> … Australian consumers have a legitimate interest in being able to purchase competitively priced, quality foods produced safely in overseas countries. Biosecurity arrangements should not lightly employ measures that interfere with these preferences. (2008, p. XVII)

Box 7.4 The value of Australia's biosecurity system at the farm gate

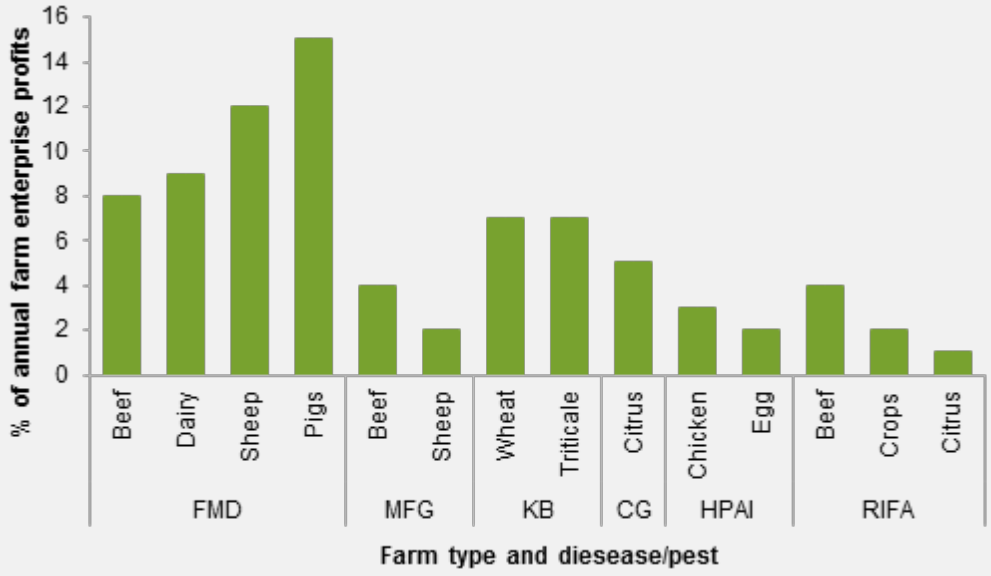
An ABARES study looked at the impact on farms' profits from six significant biosecurity threats when biosecurity arrangements were and were not in place. The likelihood of a threat becoming endemic under each situation was calculated and the additional cost to farmers estimated. The study included the costs that could arise from:

- direct production losses (for example, reductions in the productivity of crops and livestock and output quality)
- additional expenditures on control measures, and damage mitigation
- market losses because importers refused infected products.

The results showed that the different diseases would have varying impacts on profits depending on the type of farm. For example, for foot-and-mouth disease, the study estimated that profits in pig farming would fall by 15 per cent. Other industries, however, would be less affected. For example, citrus farmers' profits were estimated to fall by 1 per cent if affected by red imported fire ants.

Noting that broadacre farms typically do not farm a single product but several, combining cropping and livestock, the study also looked at the impact of diseases on typical broadacre farms, which generally could be affected by foot-and-mouth disease, Mexican feather grass, and Karnal bunt. The contribution of biosecurity activities to these broadacre farm profits ranged from $12 000 to $17 500 or 5-13 per cent of these farms' gross margin.

Contribution of biosecurity to annual farm profits[a]



[a] FMD: Foot-and-mouth disease; MFG: Mexican feather grass; KB: Karnal bunt; CG: Citrus greening; HPAI: Highly pathogenic avian influenza; RIFA: Red imported fire ants.

Source: Hafi et al. (2015).

The National Farmers' Federation (sub. 61) also said that consideration must be given to the impact biosecurity regulations have on the importation of animals, animal genetics, plants and associated material that can be used to increase productivity in farming systems.

Businesses and the broader community can incur other costs, such as the cost of pesticides (although these costs would potentially be higher if a biosecurity system was not in place or was ineffective). Many of the costs on businesses and the community are difficult to quantify because data are limited, and people's preferences are hard to assess. These costs include the time spent by businesses complying with regulations, and increased operating costs because they need to implement more measures to address biosecurity risks.

Other regulations can also affect the cost of managing biosecurity risks. For example, some state and territory moratoria on genetically modified crops (chapter 6) reduce farmers' access to pest-resistant crops, requiring them to spend more on biosecurity measures.

While it is difficult to quantify costs, a number of Australian studies indicate that the benefits from biosecurity are large and likely justify the costs. For example:

- the Commission (2002a) estimated that there would be $13 billion ($18 billion at 2016 prices) in revenue losses to the agricultural industry over a decade from a multi-state outbreak which takes 12 months to contain. The loss would be mainly due to lost markets and eradication efforts. The Commission estimated that this would lead to a $8-13 billion loss in Australia's GDP over the period.
- Buetre et al. (2013) estimated that a large outbreak of foot-and-mouth disease in Australia would result in around $50 billion in revenue losses to the agriculture industry over a decade. The larger impact when compared with the Commission's study reflects assumed market access requirements from trading partners following the outbreak due to Australia's time out of the market and loss of market share.
- Hafi et al. (2014) found that while government funded biosecurity activities to tackle red imported fire ants cost $411 million (over the period 2001–2012), without them, red imported fire ants could cause losses of $8.5 billion over a 70 year period.

These analyses focus on the economic benefits from just a few diseases. The benefits are likely to be greater when taking into account all potential biosecurity risks and the wider costs to the community.

Eliminating all biosecurity risks is not possible as there is always a risk that pests and diseases are present in imports to some extent, and that they can enter with migrating animals. As a result, biosecurity policy is about managing biosecurity risks. Too much focus on eliminating risks may not be the most effective policy or the best use of resources.

7.4 Regulatory issues raised about biosecurity

Many participants to this inquiry commented favourably about Australia's biosecurity arrangements and the benefits to farmers from Australia's biosecurity system were readily acknowledged (box 7.5). The National Farmers' Federation said:

> A robust, efficient and science-based quarantine and biosecurity system is fundamental to maintaining Australia's enviable pest and disease-free status. The competitive advantage of

Australian agriculture is our ability to produce and supply high-quality, safe, trusted products, which are traceable from farm to consumer and driven by a well-structured and thorough biosecurity system. (sub. 61, p. 25)

Box 7.5 Australia's biosecurity arrangements rank well internationally and farmers acknowledge the benefits

The World Organisation for Animal Health (OIE) complimented Australia's biosecurity system in its evaluation of Australia's veterinary services. The OIE scored Australia at the highest competency level of five for 38 of its 47 criteria on animal health and biosecurity. The lowest level Australia received was three. The OIE said:

> The evaluation results highlight Australia's extraordinary commitment to biosecurity, serving their national interests by maintaining their high animal health status. The very high level of biosecurity is founded on strong partnership collaboration and formal business arrangements amongst jurisdictions and with the private sector, including primary producers, processors, suppliers of inputs and laboratories. (Schneider et al. 2015, p. 1)

Several participants to this inquiry also acknowledged the benefits of Australia's biosecurity system to farmers. Australian Pork Limited said:

> Australia's favourable biosecurity status enables it to produce premium agricultural goods competitively, efficiently and sustainably. Current biosecurity protocols make Australia one of only a few countries that maintains a high disease-free status for pig herds … Biosecurity is critical to the pork industry remaining cost competitive. Australia enjoys excellent pig herd health which underpins productivity, profitability, animal welfare and ongoing management costs. (sub. 37, p. 4)

Voice of Horticulture highlighted:

> Avoiding pest and disease incursions is critical to the viability of the horticulture industry. Australia's unique biodiversity and relative disease-free status must be maintained, along with horticulture's reputation as a supplier of fresh, high quality, clean produce. Freedom from many of the world's major pests and diseases provides a clear advantage in both domestic and global markets. (sub. 42, p. 20)

Canegrowers submitted:

> Continued effort in biosecurity is important for the productivity and profitability of the Australian sugar industry. Stopping the entry, establishment and spread of exotic diseases and pests is vital for our industry's future. If unchecked, yield losses would be high and devastating to industry productivity and profitability. (sub. 22, p. 7)

Stephen Targett said:

> Australia currently benefits from being free from a lot of the pests and diseases that are present in the rest of the world. This is giving Australia's products a decisive edge when competing on the international arena. Bee Mites, Bee tracheal Mites, Deformed Wing Virus (all bee related) and Foot and Mouth Disease come to mind. Not having these pest and diseases reduces producer costs and helps produce a clean and green marketable product that can be sold for premium. (sub. 5, p. 2)

However, participants also raised a number of concerns about biosecurity regulation, including:

- the new Biosecurity Act and a greater role for industry
- import risk assessments
- the interaction between the Australian, state and territory governments

- internal surveillance diagnostics of biosecurity risks
- trespass on farms.

Each of these issues are discussed below.

The new Biosecurity Act and a greater role for industry

As noted above, the Biosecurity Act 2015 was a recommendation from the Beale review, which stated that:

> The core of the *Quarantine Act 1908* was drafted over a century ago. Since that time, biosecurity risks have changed significantly, as have Australia's international trade interests and treaty obligations.
>
> Given the difficulties that exist in the current Act, the Panel recommends that rather than trying to rework the existing legislation yet again, the opportunity should be grasped to develop a new Act – the Biosecurity Act … (2008, p. XXIX)

The objects of the Biosecurity Act are to provide for managing:

- biosecurity risks
- the risk of contagion of a listed human disease
- the risk of listed human diseases entering Australian territory or a part of Australian territory, or emerging, establishing themselves or spreading in Australian territory or a part of Australian territory
- risks related to ballast water
- biosecurity emergencies and human biosecurity emergencies.

It also aims to give effect to Australia's international rights and obligations, including under the International Health Regulations, the SPS Agreement and the Biodiversity Convention.

The Biosecurity Act incorporates many of the Beale review's recommendations, while also aiming to reduce regulatory and administrative burden on businesses and the community.

The Biosecurity Act aims to promote a shared responsibility for biosecurity between government and industry (DAWR 2016f). Notably, it has streamlined the application process to enable businesses to monitor biosecurity risks themselves. While the *Quarantine Act 1908* (Cwlth) allowed for this, it required businesses to form an agreement for each biosecurity activity that they carried out, and each premise that they assessed. The new Act's *approved arrangements* combine these separate agreements into one. In addition, the Australian Government expects to conduct fewer audits of businesses in these arrangements, reducing their frequency from at least twice to, on average, once per year although audit rates will depend on factors such as a business's compliance and performance (DoA 2014b).

The approved arrangements account for most of the expected net reduction in compliance costs on business, which based on the regulation impact statement, is estimated to be $6.9 million over ten years (DoA 2014b). Costs are also expected to fall because of changes to *first point of entry* requirements for vessels when they arrive in Australia (box 7.6). These reductions are partly offset by increased costs from changes to ballast water regulations and the creation of an Inspector General of Biosecurity.

Box 7.6 Main changes introduced by the new *Biosecurity Act 2015* (Cwlth)

In addition to the changes arising from approved arrangements, and additional post-border powers for the Australian Government, the provisions of the new *Biosecurity Act 2015* (Cwlth) differ in several ways from those in the previous *Quarantine Act 1908* (Cwlth). Changes include:

- allowing the Australian Government to permit vessels to apply for a standing approval to arrive at a port which has not been proclaimed as a first point of entry. The new Act also provides greater transparency around the process of proclaiming a first point of entry
- introducing a civil penalty regime which allows for civil penalties, enforceable undertakings, and infringement notices
- explicitly stating Australia's appropriate level of protection
- providing the Australian Government with greater powers to manage incursions and respond to emergencies
- providing biosecurity officials with greater powers to gather information and manage of conveyances
- appointing an Inspector-General of Biosecurity who will undertake independent audits of the Department of Agriculture and Water Resources' biosecurity activities and risk management to maintain or improve the integrity of the biosecurity system as a whole. There is currently an interim Inspector-General in place, but the newly established Inspector-General will have powers to compel compliance and provision of information
- changing the way ballast water is managed. (Ballast water is stored by ships to stabilise them during a journey. The water is taken on and discharged at different stages meaning that marine organisms can be moved from place to place with this process.) The changes bring Australia's requirements in line with international conventions and create a single, Australia-wide ballast water management regime. The main changes are to domestic ships' management of ballast water.

Sources: *Biosecurity Act 2015* (Cwlth), DAWR (2014b).

The Australian Government also has powers under the Act to manage post-border activities. Commonwealth biosecurity officers are able to order biosecurity measures to manage risks on goods or conveyances no longer subject to biosecurity control (DAWR 2016o). The Director of Biosecurity can also declare biosecurity zones and apply biosecurity measures within these zones (DAWR 2016h). However, states and territories continue to have primary responsibility for responses within their jurisdiction.

Commenting on the new Biosecurity Act, DAWR said:

> The Biosecurity Act represents a comprehensive modernisation of Australia's biosecurity legislation. The Act has been designed to be flexible and responsive to changes in technology and future challenges. The legislation has been designed to reduce unnecessary red tape and provide a more flexible risk based approach to compliance. (sub. 50, p. 9)

Several participants commented positively on the new Biosecurity Act (box 7.7). The Consolidated Pastoral Company, for example, said 'this is a good example of regulatory reform where century old prescriptive legislation has been replaced with an Act that provides for the efficient administration of the regime' (sub. 71, p. 6).

NSW Farmers' Association also commented favourably on the regulatory science framework in place which operates independently of political pressures.

> NSW Farmers' members have expressed a clear desire for the Australian Government's regulation of entry points of Australia to biosecurity risk to be conducted through a clear regulatory science framework operating independently of political pressures.
>
> This principle is in the process of being embedded in the *Biosecurity Act 2015* (Cwlth) through the development of regulations which ensure that expert scientific advice is central to the development of Biosecurity Import Risk Assessments (BIRA) through the oversight of a Scientific Advisory Group. Further, the independence of a statutory position of Inspector-General of Biosecurity of review of BIRA provides a level of transparency that will ensure the primacy of science in the making of regulatory decisions over the importation of produce into Australia. (sub. 72, p. 29).

Box 7.7 Participants commented favourably on the new *Biosecurity Act 2015* (Cwlth) and the consultation process

National Farmers' Federation (NFF):

> The NFF has welcomed the impending replacement of the *Quarantine Act 1908*, with the *Biosecurity Act 2015*. The NFF continues to work through the details of the new legislation with Government to ensure the regulations provide for a biosecurity framework that is fit for the 21st century. (sub. 61, p. 25)

AgForce:

> The underpinning regulations to the *Biosecurity Act 2015*, currently in development, will largely determine success in managing biosecurity risk. AgForce commends the industry consultation process instigated by the Australian Government Department of Agriculture and Water Resources while developing the regulations. The series of forums between the Department and the National Farmers Federation Biosecurity Taskforce is providing excellent feedback loops for generating practical and effective regulations. This is a good consultation model for generating other legislative and regulatory instruments and is supported by AgForce. (sub. 17, p. 16)

Australian Veterinary Association:

> … the Australian Veterinary Association supports the planned implementation in June 2016 of the *Biosecurity Act 2015*, which aims to introduce a more flexible, risk-based approach to biosecurity regulation. It is critical that this new legislation and supporting regulatory arrangements are established in such a way as to protect Australia from threats to its animal and plant industries. (sub. 26, p. 5)

Industry's greater role through approved arrangements

While many participants were positive about the new Biosecurity Act, the Community and Public Sector Union (CPSU) flagged potential problems with approved arrangements:

> Many CPSU members have expressed concerns that the move away from Department-run inspections towards self-regulation by industry participants may have adverse impacts on quarantine outcomes. (sub. 6, p. 2)

In particular, the CPSU is concerned that the new legislation is not specific, providing industry with too much leeway when carrying out inspections. The CPSU is also concerned that allowing company employees to be biosecurity officers makes businesses less accountable for risks, and may lead to conflicts of interests as a company's profit motive may conflict with its biosecurity responsibilities.

While assessing whether approved arrangements weaken Australia's biosecurity is difficult as the Biosecurity Act only took effect in June 2016, the Commission judges the risk of this as low. In particular and as noted, businesses could apply to self-assess biosecurity risk under the *Quarantine Act 1908* (Cwlth). The new approved arrangements mainly streamline this application process, reducing costs to businesses.

The lower compliance costs should encourage more businesses to enter approved arrangements, as self-assessing biosecurity risks will be cheaper than government audits for more businesses. This can weaken Australia's biosecurity if businesses do not adequately assess their biosecurity risks, which can occur if businesses' interests conflict with Australia's biosecurity priorities.

However, businesses' interests are often aligned with Australia's biosecurity objectives. As a result, many businesses have their own biosecurity arrangements in place, and approved arrangements will reduce overlap of governments' and businesses' arrangements. In this way, approved arrangements can free up government resources to focus on others risks, which can improve Australia's overall biosecurity. (Additionally, businesses have a strong incentive to notify authorities of threats outside of their properties as this can reduce the harm to them.)

However, there may also be circumstances when governments' and businesses' interests are not so aligned — for example a farmer transporting cattle may not disclose the symptoms of a particular animal to avoid the entire load from being quarantined or destroyed. As such, governments play an important role in monitoring and acting on biosecurity threats.

The effectiveness of approved arrangements relies on DAWR ensuring that approved businesses' objectives are aligned with Australia's biosecurity priorities. The new civil penalties under the Biosecurity Act provide DAWR with additional tools to effectively manage businesses that undertake their own biosecurity activities. In addition, biosecurity officers are now able to direct an approved business to carry out a biosecurity measure (or

refrain from doing so). The Director of Biosecurity also has power to revoke a business' arrangements.

Awareness of biosecurity

While greater industry involvement in biosecurity, such as through approved arrangements, can be beneficial, the effectiveness of industry involvement relies on businesses carrying out their roles. As the National Biosecurity Committee stated:

> Successful collaborative action to manage established pests and diseases, including those that are considered to be nationally significant, depends on all stakeholders having an understanding of their roles and responsibilities. (NBC 2015, p. 8)

The Northern Territory Department of Primary Industries and Fisheries suggested that some farm businesses may not clearly understand their responsibilities:

> It is our view that some Australian primary producers do not fully recognise the increasing threats posed by the pests and diseases nor fully appreciate the significance of biosecurity programs in maintaining or enhancing market access, both domestically and internationally. In order to help mitigate these increasing risks, an improved national approach to biosecurity is required. (sub. 67, p. 2)

Businesses that do not understand their responsibilities may not adequately manage their biosecurity risks, which weakens Australia's overall biosecurity arrangements, harming other businesses and the community. As the NSW Natural Resource Commission said regarding pest management:

> When individual landholders, managers or other parties do not uphold their responsibilities, the whole system weakens. It is critical that public and private landholders are not only engaged, but are also held to account for controlling pests on their land. (NSW NRC 2016, p. 2)

The Northern Territory Department of Primary Industries and Fisheries (sub. 67) also noted that while the move to individual property biosecurity management (rather than state and territory based regulation) is about minimising regulatory burden, it also needs to be recognised that there is an inherent risk that a disease could become established on a property, spread to other properties and affect collective market access.

And, as noted in box 7.1, smaller producers and hobby farmers can lack knowledge about biosecurity risks and may not maintain good biosecurity standards. These farmers are often disconnected from traditional agricultural networks, particularly as some may keep livestock and plants without selling them. If pests and diseases establish on these farms (particularly those located in peri-urban areas close to ports), and they spread, they can affect commercial operations and weaken the biosecurity system.

However, the Commission heard little evidence that this is a widespread issue. Because many businesses benefit from biosecurity efforts and/or can face penalties for not complying with regulations, they have an incentive to know their responsibilities.

Governments and industry groups are also often engaged in the biosecurity issues that businesses face, developing management plans with stakeholders and conducting information sessions. But more may need to be done to inform small producers and hobby farmers about their responsibilities around biosecurity.

There is no doubt that shared responsibility requires clearly defined roles, responsibilities and accountability. However, in practice making the distinction between who should be responsible for what is not always straightforward. As the Tasmanian Department of Primary Industries, Parks, Water and Environment said:

> The notion of shared responsibility is easily invoked because it speaks to principles of equity and cooperation with which few people would argue. However, the practical application of shared responsibility in biosecurity is difficult because it involves making concrete distinctions between, and decisions about, public versus private goods, and therefore who ought to pay, why, under what circumstances and how much. (TDPIPWE 2010, p. 97)

Concerns about import risk assessments

DAWR assesses the risk of any proposed imports into Australia through either a review of existing assessments or a more formal Biosecurity Import Risk Analysis (BIRA) (DAWR 2016g).

A BIRA identifies the pests and diseases of quarantine concern that may be carried by the imported goods, and assesses the likelihood that an identified pest or diseases would enter, establish or spread, and the probable extent of the harm that would result. DAWR liaises with stakeholders when conducting BIRAs. Quarantine measures are put in place if the assessed level of quarantine risk exceeds Australia's ALOP.

BIRAs replaced earlier Import Risk Analyses and took effect under the new Biosecurity Act in June 2016. Details applying to their operation are in the Biosecurity Regulations 2016 and the Biosecurity Import Risk Analysis Guidelines (DAWR 2016g)

Some participants to this inquiry raised concerns about the transparency of BIRAs (Voice of Horticulture, sub. 42) and the role of the Scientific Advisory Group (which advises DAWR on scientific risks related to an import). Participants noted that the Scientific Advisory Group could benefit from external experts (AgForce, sub. 17) and suggested that industry should have the opportunity to appoint a scientific delegate (Voice of Horticulture, sub. 42).

The Tasmanian Department of Primary Industries, Parks, Water and Environment also noted that risk assessments do not adequately account for regional differences.

> Of concern to Tasmania is that arrangements for import assessments under the *Biosecurity Act 2015* (Cwlth) adequately address regional differences. These differences may be due to uneven distribution of susceptible hosts, significance of an industry on a regional basis, or climatic and other environmental issues that may impact on the survival and spread of the pest or disease. If assessments adequately address these issues and importation conditions are set to

> reflect them, for example by only permitting imports into specific regions of Australia, then Tasmania may not need to undertake a separate import assessment or impose additional conditions, which would result in significant savings to government and a saving to industry. (sub. 62, pp. 7–8)

DAWR sought to address these issues as part of its review of Import Risk Analyses (DAWR 2015g). The review, which began in 2014, involved stakeholder consultation, and led to the new BIRAs.

Aspects of the BIRA process designed to address stakeholders' concerns are:

- additional details about the risk assessment process and methodology to improve transparency (DAWR 2015d). DAWR is trialling biosecurity liaison officers who are conduits between DAWR and stakeholders, informing and updating stakeholders about ongoing risk assessments (Joyce 2016c)
- using external expertise in the Scientific Advisory Group and taking into account stakeholders' views (DAWR 2015d, 2016g)
- looking to improve transparency about the ways risk assessments take into account, and assess, regional differences (DAWR 2015d, 2016g). However, completely accounting for regional differences can be difficult (discussed below).

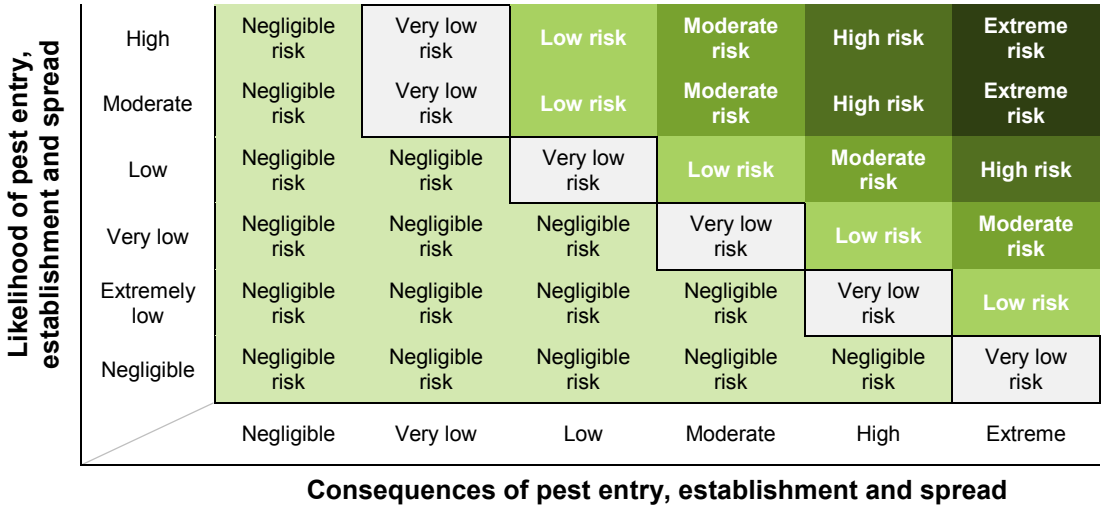
As with other aspects of the new Biosecurity Act, the effectiveness of the BIRA process is difficult to assess as the regulations and guidelines have only recently taken effect.

Should a broader economic approach be used for risk assessments?

Import risk assessments use biological or other scientific and economic evidence, and consider the costs and benefits arising from the imported product. This includes assessing the impact on animals, plants and the environment, the cost of biosecurity measures to manage the threat, and reduced yields for producers and any direct losses of access to domestic and international markets (DAWR 2016g).

A product can be imported if its potential risk to Australia is equivalent to or lower than Australia's ALOP (which is qualitatively set as 'very low'). The potential risk depends on the *likelihood* of the pest or disease entering Australia and its *consequences* to Australia after it enters (and can be shown diagrammatically on a risk estimation matrix — figure 7.2). Import risk assessments can propose biosecurity measures to reduce a product's risk to very low so a product can be imported.

Figure 7.2 **Risk estimation matrix for imports[a]**



[a] Australia's ALOP is achieved if the estimated risk is at or below very low.

Source: DAWR (2016g).

Import risk assessments, however, do not consider the potential impact of broader economic factors, including market competition (DAWR 2016g). Benefits from market competition can include reduced prices for consumers from access to overseas products, and greater product choice. When the overall benefit from an import after accounting for broader economic factors is positive, there is an in-principle case for Australia to import a product.

Outcomes from these cases can differ from those based on an ALOP. Some products that meet Australia's ALOP may be costly to Australia once all economic factors are considered, while other products which are riskier than specified by the ALOP could be justified under a broader economic approach.

Some issues with incorporating a broader economic approach

Issues can arise from taking into account broader economic factors, both legally and in practice.[17] Legally, accounting for broader economic factors may breach the SPS agreement, which can result in trade sanctions through the WTO. Indeed, the guidelines to the BIRA note that:

> BIRAs cannot take into account the potential economic impacts of matters such as the effect on market competition caused by importing goods, or the net national benefit resulting from the importation as this would not be consistent with Australia's international trade obligations. (DAWR 2016g, p. 8)

[17] The following discussion is based on Binder (2002, pp. 51–54). See paper for further details.

A broader economic approach could lead to different acceptable levels of risk for different imports, as the net benefits for each import will vary (Binder 2002). However, this can breach article 5.5 of the SPS agreement, which requires WTO members to aim to achieve consistency when applying their appropriate level of protection, and avoid arbitrary and unjustifiable distinction in risk levels. That said, Binder argues that a transparent and objective analytical framework (such as, in principle, cost–benefit analyses) may avoid arbitrary and unjustifiable results, and thus may not breach the article.

Incorporating an economic approach can also breach article 2.3, which requires countries to impose measures on product where 'similar or identical conditions prevail'. But despite identical conditions around risks, accounting for economic benefits to Australia can lead to varying levels of net benefits for imports. The SPS agreement also does not specify that members can account for broader economic benefits (article 5.3). The agreement does specify that members' measures should be 'based' on international standards (article 3.1) although Binder provides evidence suggesting that this is not necessarily mandatory. A revised framework could breach both conditions.

Even if the SPS agreement permitted members to account for economic factors in their risk assessments, in practice, countries' methodologies may not always be transparent, particularly as the data and expertise needed to quantify the impact of broader economic effects like competition are often limited.

In these cases, countries can misuse such a methodology to implement trade-restrictive measures, which protect particular groups. As Snape and Orden said:

> … the purpose of the SPS Agreement is simply to prevent countries from making egregious arbitrary and unjustifiable distinctions between products on quarantine grounds, and that if it achieves this it will have achieved a great deal. Taking into account other net benefits of trade could backfire, and open the door to protection against economic competition for particular producers or socio-economic groups in a country. This could undermine what was intended to be achieved under the WTO Agreement on Agriculture. In such event, the alternative decision rule [which incorporates a broader economic framework] could facilitate what many observers feared: that as other forms of protection are wound back, economic protection through quarantine provisions could be increased. The best could be the enemy of the good. (2001, pp. 179–80)

In contrast, assessments of risk against an ALOP, which does not account for broader economic factors, are more defensible. There is still scope for countries to implement trade-restrictive policies, and several cases have been taken to the WTO. However, the scope is reduced; and for this reason, while incorporating a broader economic approach into import risk assessments is ideal, it may be difficult without other institutional and informational changes.

Issues with state and territory regulations

Stakeholders raised concerns about difficulties operating across state and territory borders, and reduced funding for surveillance and diagnostics activities.

Difficulties operating across state and territory borders

Biosecurity regulations vary across jurisdictions, as does the assessment of the risk arising from particular products which may contain pests and diseases. NT Farmers described Australia's biosecurity regulatory arrangements as:

> … one of the most complex structures around, one which brings to play Federal, and Territory regulations, as well as cross jurisdictional regulations. For example, regulation governing market access between the Northern Territory and South Australia, is onerous and creates an us versus them mentality. (sub. 8, p. 1)

Different regulations can cause problems when businesses look to access other states' markets or transport products between states. For instance, states have different regulations relating to the movement of fodder and delays assessing other states' fodder for biosecurity risks meant some Tasmanian farmers could not adequately feed their cattle (Hanson 2016).

While pests, diseases and weeds do not recognise state borders (which points to the need for a national biosecurity framework), diseases are often regional in distribution and the states and territories do face different risks. As the Western Australian (WA) Government said:

> WA has distinct requirements for biosecurity regulations which have driven the need for variations to arrangements … applying in the eastern states of Australia. WA, because of its relative isolation has pest and disease free status that does not exist in the eastern states. This gives the State access into valuable and emerging markets. (sub. 54, p. 32)

As a result, some regional variation in biosecurity regulations is appropriate, but issues can arise when jurisdictions evaluate their risks independently from each other.

Trade-restrictive regulations

States and territories aim to set regulations on goods arriving from interstate in line with an ALOP, which states and territories (except Tasmania) agreed under the IGAB would be Australia's ALOP (COAG 2012a). Tasmania sets its own ALOP on goods, which like Australia's is 'very low' but can vary from the outcomes under Australia's ALOP (TDPIPWE 2010).[18]

[18] Tasmania's Department of Primary Industries, Parks, Water and Environment noted that 'despite expressing ALOP in similar terms and adopting similar methods for assessing import risk against it, it is possible for Tasmanian import risk analyses to result in different, and typically more conservative conclusions about risk compared with those made for Australia as a whole' (TDPIPWE 2010, p. 94).

However, jurisdictions can be motivated to implement trade restrictions through regulations that are more conservative than the jurisdiction's ALOP. Trade-restrictive regulations generally protect a particular group, but can be detrimental to others in the state (such as either producers and consumers) and those in other jurisdictions. The South Australian Government said:

> Some jurisdictions have implemented restrictive regulations that prohibits some commodities being traded between states (e.g. potatoes). It is imperative that such restrictions are based on sound evidence supporting the need to manage biosecurity risks only. Restrictive trade arrangements between states which have no biosecurity basis send the wrong message to our international trading partners and significantly increase costs to growers and to consumers.
>
> National leadership is needed to take action to resolve interstate trading that may be in excess of the 'Acceptable Level of Protection' (ALOP) under the *Biosecurity Act 2015.* (sub. 57, p. 25)

Provisions under the IGAB should limit state and territory use of trade-restrictive regulations. States and territories (except Tasmania) agreed under the IGAB to ensure that their biosecurity regulations will be 'the least trade restrictive possible and based on a scientific analysis of the risk of entry, establishment and spread of a pest or disease and applied only to the extent necessary to achieve Australia's ALOP' (COAG 2012a, p. 8). When a dispute arises, jurisdictions agreed to use a formal resolution process.

Little information is available on the effectiveness of these provisions under the IGAB. The current review of the IGAB is assessing these provisions, and whether they should be revised (Craik, Palmer and Sheldrake 2016). In the Commission's view, the review should also look at the impact of Tasmania's decision not to participate in from the IGAB on the Agreement's effectiveness.

Accounting for jurisdictions' priorities

Even when state and territory biosecurity regulations accurately reflect their ALOP, sometimes the best outcome for Australia overall may not be reached. This is because jurisdictions make decisions independently, and may not consider the broader economic impacts from interstate trade.

Under the IGAB, state and territory agreed to permit a good into their jurisdictions if the good's risk meets the jurisdiction's ALOP. Risk assessment for interstate movement of goods is similar to the national process carried out for imports — it combines the likelihood of a pest or disease carried with the good entering and spreading and the consequences of this.

This assessment does not generally account for broader economic impacts from a good entering, such as the impacts on competition. Considering these impacts can lead to different outcomes: for instance, a good's risk can be higher than a state's ALOP, but the benefits to consumers from lower prices and increased product choice may still yield a net

benefit. However, as with import risks assessments between countries, allowing states and territories to incorporate broader economic impacts may not be practical.

Also, even if the methodologies are transparent, considering broader economic impacts may not be ideal for the nation overall as the impact on other jurisdictions may not be accounted for. For instance, a state may be better off from restricting or regulating the entry of a good, but the benefits may not outweigh the costs to other states from losing market access or complying with regulations. Cases like this reduce the welfare of the Australian community, and suggest that a more nationally focused approach than what is currently in place would be better.

Reduced funding for surveillance and diagnostics

Surveillance and diagnostics of pests and diseases is vital, so that they are detected before becoming established. Because the design and resourcing of the national system by the Australian Government is premised on certain levels of state resourcing, jurisdictions cutting back on biosecurity spending could put at risk Australia's biosecurity system.

Some evidence suggests that state and territory surveillance and diagnostics activities have weakened with reduced funding for biosecurity. In particular, a report by the Victorian Auditor-General's Office highlighted the potential impact of reduced biosecurity funding in Victoria.

> [The Victorian Department of Economic Development, Jobs, Transport and Resources'] capacity to effectively detect, prepare for and respond to an emergency livestock disease outbreak has been weakened by a decline in financial and staff resourcing for core biosecurity functions. This decline has resulted in a significant drop in surveillance coverage and the increased likelihood of a major disease outbreak going undetected until it has become established. This would increase the scale and complexity of an emergency response. The potentially severe economic and health impacts of such an outbreak in Victoria highlight the urgent need to address this risk. (VAGO 2015, p. X)

The WA Government also submitted that a 2012 forum on biosecurity preparedness in the state's grains industry identified that 'surveillance and diagnosis was considered inadequate to maintain data sets for trade purposes and new market access submissions' (sub. 54, p. 35).

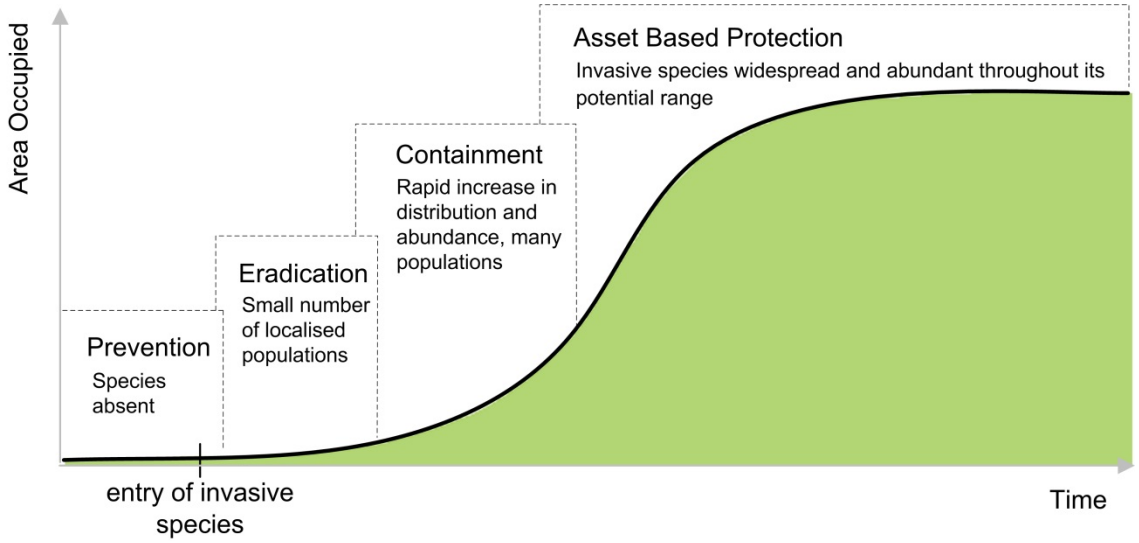
Reduced surveillance of biosecurity risks at the state and territory level increases the likelihood of a disease outbreak going undetected until it is established. If this occurs, states could impose more stringent regulations to compensate for others' lax regulations, which would in turn make it difficult for businesses to transport products into or through some states.

However, the effectiveness of surveillance and diagnostics also depends on how efficiently resources are used, and there appears some scope to improve this, particularly through a more coordinated approach between jurisdictions. As with regulations for moving goods

interstate, when states and territories act independently from each other, they have little incentive to carry out surveillance and diagnostics activities that are beneficial to other jurisdictions, but not to them. Also, they are likely to focus surveillance on their biosecurity priorities as they have limited resources to spend. This may not lead to an ideal outcome for the national biosecurity system and the Australian community.

More generally, when deciding where to spend biosecurity dollars, governments must choose the most effective measure to tackle a threat. Determining the balance between different types of projects is guided by the generalised invasion curve (figure 7.3).

Figure 7.3 **Generalised invasion curve**



Source: Agriculture Victoria (2016a).

There are four key types of action that may be appropriate at different stages of a pest or disease incursion:

- *prevention* for keeping out pests and diseases from entering Australia (including quarantine and offshore inspections)
- *eradication* to eliminate a threat within Australia, generally to prevent it from establishing
- *containment* to restrict a pest or disease to a defined area and limit its spread and impact
- *asset-based protection* for pests and diseases that are widespread so eradication and containment are unfeasible.

The returns on investment are different for the various phases of invasive species management, with the highest return on investment generally achieved through preventing entry of exotic and new threats, followed by eradication. Pubic benefits from protecting

private assets (the far right of figure 7.3) are generally lower when compared with other activities where government can play a role. As a National Biosecurity Committee discussion paper recently said:

> The benefits of managing an established pest or disease accrue predominantly to the owner of the land or the owner of the asset, so asset-based management may be the most cost-effective for an individual and/or as the basis for collective action by a community or industry. (NBC 2015, p. 5)

Many asset-based protection and containment measures fall under this category. Eradication and prevention measures can also be implemented more cost effectively in some instances when governments and industry share responsibilities for funding and implementation.

Scope for nationally coordinated polices under the IGAB

There are clear benefits to the Australian community from coordinating state and territory regulations on moving goods interstate, and their surveillance and diagnostics activities. Similar benefits would arise from a coordinated policy for other biosecurity measures, such as containment and eradication measures.

A collaborative policy would benefit from states' and territories' capability to administer biosecurity, and their understanding of state-specific issues. However, a collaborative policy also requires national leadership.

The IGAB takes steps towards a collaborative and coordinated approach for biosecurity measures. For example, the NEBRA establishes national arrangements between governments for responding to nationally significant biosecurity incidents, and the Australian Government provides leadership (COAG 2012b).

Sectoral committees take a lead role in developing strategies under the National Surveillance and Diagnostics Framework. The Framework was developed to facilitate an integrated approach to the funding and management of surveillance, and its policy principles are national strategies for surveillance and diagnostics and identifying priorities for investment and promoting harmonisation of jurisdictional approaches (NBC 2014).

The National Biosecurity Committee's proposed policy for a national framework for managing 'nationally significant' pests and diseases suggests that either government, industry or the community can take a lead role depending on the circumstances (NBC 2015). The policy suggests developing a national management plan or strategy for these threats which would include those that affect Australia's economy. A strategy could include responsibilities for government, industry and the community, and part of government's role would be to 'apply nationally consistent regulatory measures only to the minimum extent necessary to manage unacceptable risks' and 'facilitate coordinated policy across jurisdictions for the management of established pests and diseases … ' (NBC 2015, p. 9).

The review of the IGAB will look at the effectiveness of the agreements and the policies developed under it. The review should consider the effectiveness of these policies in coordinating jurisdictions' interests for the overall benefit of the Australian community, and whether clearer national leadership (by the Australian Government or another national body) could improve Australia's biosecurity system.

Allocating resources to area of greatest return

Several polices developed under the IGAB aim to allocate government resources to biosecurity measures that provide the greatest net benefit. An example is the National Surveillance and Diagnostics Framework which aims:

> … to ensure that surveillance and diagnostics are supported by risk based decision making to help prioritise the allocation of government resources and investment to areas of greatest return, and to maximise the use of existing capability and infrastructure. (NBC 2014, p. 1)

Governments generally use cost–benefit analysis to assess whether to carry out a biosecurity measure, and will only embark on a measure if the project yields a net benefit. The *National Framework for Biosecurity Benefit:Cost Analysis* was developed to guide CBAs under the NEBRA. It consists of key requirements that a cost–benefit analysis should address, with the aim of facilitating a consistent approach to analyses to help achieve best practice (COAG 2012b).

While CBAs are useful for deciding whether to carry out a project, Kompas (2016) noted problems when CBAs of biosecurity measures are viewed in isolation and not compared with the potential benefit from other projects. In particular, a biosecurity measure may yield a net benefit but still may not be the best use of resources. Another measure that addresses the same threat, or even one that addresses a different threat, may yield a higher return for each dollar spent, leading to a more efficient use of biosecurity resources.

Kompas advocated for investing in a 'portfolio' of biosecurity measures that produce the greatest risk-adjusted return given the total level of resources. A portfolio could include any combination of measures that address risks across the different stages of a pest or disease incursion (as shown by the invasion curve, figure 7.3). Choosing measures for the portfolio would depend on where each additional dollar could be best spent to reduce the overall biosecurity risk to Australia.

The Queensland Biosecurity Capability Review (for which Kompas was a member of the review panel) put forward a similar approach (Brooks, Glanville and Kompas 2015, p. 11). The National Biosecurity Committee has been exploring a portfolio investment approach when developing a national biosecurity investment strategy (DAWR 2015r).

A portfolio approach appears the most efficient way to allocate limited biosecurity resources. However, there can be limits to which measures can be compared (particularly given the broad number of biosecurity threats and response measures, and limited available data) and this may explain the limited use of such analysis historically (Heikkila 2011).

However, wherever feasible, governments and industry should look at adopting a portfolio approach to deciding where to spend biosecurity dollars.

Adopting new technology

Technology can also improve the efficiency of biosecurity measures. There are a number of examples of governments, research organisations and industry using technology to improve measures. For example:

- the Queensland Department of Agriculture and Fisheries uses helicopters fitted with infra-red and thermal cameras to help identify red imported fire ant colonies. The helicopters can monitor larger areas and save money when compared with ground based surveillance involving sniffer dogs and field officers visually checking the ground (Queensland Department of Agriculture and Fisheries 2013)
- staff at quarantine stations and government departments use remote microscope systems to upload images of infected plants which experts in different countries can access and help identify pests and disease. This reduces the cost and time of identifying a pest or disease, which would otherwise be identified by physically mailing the specimen to an expert (Thompson et al. 2011)
- researchers at the CSIRO are using tiny sensors on the back of bees to monitor bee populations for biosecurity risks such as Varroa mite, which can destroy bee populations, affecting farmers' yields (CSIRO 2016)
- the Victorian Department of Economic Development, Jobs, Transport and Resources developed its 'MAX' data and case management system to help monitor disease outbreaks. The system allows biosecurity officers to access and enter information on the move, and contains analysis tools such as maps which can improve government's responses to outbreaks (VDEDJTR 2016c).

Continued and increased use of technology will improve the efficiency of limited biosecurity resources.

Interstate Certification Assurance

The Interstate Certification Assurance (ICA) scheme is a national scheme that allows accredited businesses to self-certify the health of their plants to ensure their plant products meet importing state or territory requirements. This provides an alternative for businesses to being certified by government inspectors (and it can be less expensive).

The South Australian Government raised concerns about the ICA scheme:

> The greatest biosecurity regulatory burden on agricultural business in Australia is through the Interstate Verification Certification Arrangements (IVCA) and Interstate Certification Arrangements (ICA). These regulatory regimes implemented by each jurisdiction under their respective Plant Health legislation has created a labyrinth of regulation, processes and

> procedures which restrict and in some cases stifles interstate trade in horticulture produce. (sub. 57, p. 25)

However, few other stakeholders to this inquiry or the Agricultural Competitiveness White Paper raised concerns about the scheme. This appears in line with ABARES conclusion in its *Review of Selected Regulatory Burdens on Agriculture and Forestry Businesses* (Gibbs, Harris-Adams and Davidson 2013). The review concluded that concerns about commodity classifications subsided with government initiatives aimed at improving businesses' understanding of the ICA scheme. The review also said multiple commodity classifications are reasonable when they reflect the many factors that can affect a commodity's biosecurity status.

Measures developed under the IGAB should also facilitate more consistent regulations, and the current review of the IGAB will assess whether it is helping to harmonise regulations.

There is also scope to harmonise regulations through the work of the Subcommittee on Domestic Quarantine and Market Access and under the National Plant Biosecurity Strategy. The Subcommittee comprises state, territory and Australian Government representatives and Plant Health Australia, and aims to minimise regulatory burdens on industry, and ensure regulations are coordinated and harmonised across jurisdictions (Subcommittee on Domestic Quarantine and Market Access 2016). The National Plant Biosecurity Strategy is a 10-year plan for Australia's plant biosecurity system developed by Plant Health Australia with one of its component strategies being to adopt a 'nationally consistent plant biosecurity legislation, regulations and approaches where possible within each state and territory government's overarching legislative framework' (Plant Health Australia 2010, p. 7).

Concerns about risks to biosecurity from trespass on farms

In the Agricultural Competitiveness Green Paper, the Australian Government stated that 'stakeholders suggested, and the Australian Government encourages, that States and Territories strengthen their laws to stop trespass on farms and to meet the challenges of new invasive technology including surveillance devices' (2014a, p. 23). Concerns about biosecurity and reputational risks associated with trespass on farms were also raised in this inquiry. For example, Primary Producers SA said that:

> Animal welfare has become a fertile ground for political activists. Intensive animal producers should not have to live in fear of activists raiding them and creating bio-security issues. (sub. 41, p. 4)

And the West Wimmera Shire Council suggested that 'the regulatory environment for activists needs to be strengthened, particularly around the biosecurity risks for those travelling between farms without telling anyone' (sub. 49, p. 5).

Trespass is unlawful and clearly undesirable. One way of reducing it is to remove the motivation for it. Chapter 5 discusses how monitoring and enforcement of farm animal

welfare standards could be improved. These proposals may help to increase confidence within the community that livestock welfare outcomes are being achieved, and may help to reduce trespass on farms. However, the Commission is interested in any other strategies (including strategies used elsewhere in the world) that could be used to discourage farm trespassing and lessen biosecurity risks.

INFORMATION REQUEST 7.1

Participants raised concerns about farm trespass, particularly as trespass can increase biosecurity risks. What strategies could be used to discourage farm trespass? Are existing laws for trespass sufficiently enforced in relation to farm trespass?

8 Transport

Key points

- Given the large distances between many of Australia's farms, intermediaries and end users, an efficient and cost effective transport system is critical to the competitiveness of the agricultural sector. Transport costs from farm gate to destination (both domestic and international destinations) account for 21 per cent of farm gate value on average.
- The majority of Australia's agricultural goods are transported via roads. Differences in heavy vehicle dimension and weight restrictions to access the road network, especially at the 'first and last mile' of a journey, force operators to use inefficient heavy vehicle combinations, limiting freight efficiency and productivity gains. This burden could be reduced by:
  - streamlining and simplifying road access arrangements
  - over the longer term, establishing institutional arrangements to ensure road investments are made where there is the greatest net benefit. Desirable reforms include introducing road-user charging for selected roads, ensuring road revenues are spent in ways that incentivise the efficient supply of roads, and creating Road Funds.
- The creation of the National Heavy Vehicle Regulator (NHVR) is a step in the right direction in improving road access for heavy vehicles, but there remain inefficiencies in heavy vehicle regulation, with delays in processing road access permits being a significant issue. The NHVR should be reviewed to ensure that the national system is delivering benefits to road users and farm businesses.
- The Road Safety Remuneration Tribunal imposed costs that were not commensurate with its safety benefits, and its abolition will reduce regulatory burdens for farm businesses.
- The poor state of some rail infrastructure increases both journey times and the overall cost of freight for agricultural producers, and can exacerbate pressure on road networks as producers increasingly switch to road freight. While a number of factors have contributed to this situation, progressing road pricing reform will help address concerns about the effect of pricing distortions on investment in rail networks.
- Efficient access to ports is crucial for agricultural producers as most agricultural exports are transported by sea. Privatisation of major ports can lead to efficiency gains and be in the public interest if undertaken appropriately, including ensuring that sale conditions do not seek to increase the sale price by conferring monopoly rights over port services to the buyer.
- Current coastal shipping regulations which give preference to Australian-flagged ships for transporting domestic cargo between Australian ports increase costs for farm businesses reliant on sea freight. To improve the efficiency of coastal shipping services, barriers to entry for foreign vessels should be removed to allow greater competition.
- Farmers and the community would benefit from the removal of ethanol mandates and excise arrangements which deliver negligible environmental benefits and come at a high cost.

Access to efficient and reliable transport networks is essential for the competitiveness of farm businesses. Transport costs from farm gate to destination (both domestic and international destinations) account for 21 per cent of farm gate value on average (Australian Government 2015a). Transport costs, however, vary by agricultural industry and destination, with some estimates ranging from 4 per cent to almost 50 per cent of farm gate price (Goucher 2011; Sheepmeat Council of Australia and Cattle Council of Australia, sub. 88, att. 1). AgForce provided some examples:

> … transport of a 550 kilogram steer from Surat in southern inland Queensland to Yokohama, Japan represents 13.1% of the total farm gate value. Similarly, to deliver a live beast from Queensland to Indonesia represents around 30% of the total farm gate price. (sub. 17, p. 9)

Agricultural supply chains can involve transport distances in Australia of over one thousand kilometres (Goesch et al. 2015) and, according to some participants, domestic transport costs can be more costly than the sea freight from Australia to some international destinations. The Export Council of Australia, for example, said:

> … a business exporting beetroot to Dubai from Gippsland, Victoria revealed that to export 1 x 20ft container of beetroot door-to-door from Gippsland to the United Arab Emirates would cost approximately $12 000. The actual sea freight cost from Melbourne to Jebel Ali would be in the vicinity of $4000, while the balance of $8000 is needed to cover the land based transport costs and the documentation costs for quarantine arrangements. (sub. 74, p. 5)

All levels of government in Australia are involved in regulating transport networks. Transport rules are in place to ensure public safety and amenity, to promote competition and facilitate access to infrastructure.

This chapter looks at transport regulation in the areas of heavy vehicles (section 8.1), rail (section 8.2), ports (section 8.3) and coastal shipping (section 8.4). Section 8.5 examines the mandates and excise arrangements that are being used to support the biofuel industry.

Some agricultural products (including fruit, vegetables, meat and seafood) are exported by air. Concerns about air freight were not raised by participants to this inquiry and as such, have not been examined in this chapter.

Governments also play a key role in the provision of transport infrastructure. Ways to improve the efficiency of infrastructure provision were considered in detail in the Commission's inquiry into public infrastructure (PC 2014c), and are beyond the scope of this inquiry.

8.1 Heavy vehicles

The majority of Australia's agricultural goods are transported via roads (Tulloh and Pearce 2011). Grains, milk, fruit and vegetables, and livestock are all collected from farms and transported by road to processing plants or end users.

As the NSW Farmers' Association said:

> Integral to the operation of a farm business is the use of road transport to freight farm produce to either an intermediary, such as a grain receival site, saleyard or abattoir, or an end user. (sub. 72, p. 22)

About 27 per cent of the volume of road freight is from the agricultural sector — in 2012-13 the sector consumed about $1.2 billion of road transport services (ABS 2015a; BITRE 2015b). About two thirds of the food and livestock that are transported by road are moved by articulated trucks (load carrying vehicles consisting of a prime mover with a turntable device for towing trailers), primarily by B-double, road train or single trailer truck configurations (ABS 2015f, 2015g).

A wide range of regulations affect heavy vehicle operations. Regulations are in large part aimed at addressing spill-over effects from heavy vehicles and their use of the road network (including damage to roads and bridges, safety concerns, traffic congestion and noise pollution). But while heavy vehicle regulations address legitimate safety and amenity concerns, they may be more stringent than necessary to address concerns over social impacts, or they could be administered in a way that places unnecessary burdens on businesses. It is important to minimise any such unnecessary regulatory burden.

A national system of heavy vehicle regulation

Historically, states and territories adapted the national model law on road transport — the Australian Road Rules — according to their individual needs and preferences, which resulted in inconsistent heavy vehicle regulations between jurisdictions. A stocktake of heavy vehicle regulations across the states and territories in 2011 identified 368 interjurisdictional variations, and 34 had 'medium or high' economic impacts on businesses (NTC 2011). Local governments (except those in Western Australia) can also make decisions on heavy vehicle access and conditions, which adds further regulatory complexity.

In 2009, COAG agreed to establish a single national heavy vehicle regulatory regime to cover all vehicles over 4.5 tonnes — the regime is managed by the National Heavy Vehicle Regulator (NHVR). Its role is to administer a single set of national heavy vehicle laws in all jurisdictions under the Heavy Vehicle National Law (HVNL). To date, New South Wales, Victoria, Queensland, South Australia, Tasmania and the ACT are participating in the HVNL, and Western Australia and the Northern Territory are not.

The NHVR began operating in January 2013, and at that time provided the National Heavy Vehicle Accreditation Scheme and Performance Based Standards (PBS) services. In February 2014, the HVNL commenced in the six participating jurisdictions, and the NHVR became responsible for all regulatory services under the HVNL. This includes matters relating to vehicle standards, mass, dimensions and loadings, fatigue management, heavy vehicle accreditation and on-road enforcement (NHVR 2016d).

One of the key functions of the NHVR is to act as a 'one stop shop' for heavy vehicle road access permits in participating jurisdictions. That is, heavy vehicle operators apply to the NHVR for permission to access roads (when the planned journey would take place in multiple participating jurisdictions) and the NHVR then obtains consent from all relevant state, territory and local government road managers.

The regulations governing heavy vehicle road use are complex

Heavy vehicles can only use roads if they meet rules on dimensions (width, height and length), mass and loading. Restricted access vehicles[19] — a category which includes Higher Mass Limit (HML)[20] vehicles — do not have 'as of right' access to the road network and require a NHVR notice or permit to operate on parts of the network. In general, larger heavy vehicles like road trains are permitted in remote areas, and progressively smaller heavy vehicles are allowed as operators move towards cities and built-up areas (figure 8.1).

Heavy vehicle road access is further complicated by longstanding differences in state and territory rules governing heavy vehicles. For example, while all jurisdictions allow 'as of right' access for B-doubles less than 19 metres long (or 21 metres in Tasmania), the accessible road network becomes restricted once the vehicle exceeds a certain mass limit which differs across participating jurisdictions. These weight limits are published in a NHVR national notice[21] as a collection of schedules containing all access conditions applicable to B-doubles in each jurisdiction. Each schedule also contains references to external documents that further specify the weight restrictions or time-of-travel restrictions on particular routes. National notices for various other vehicle classes present information on access conditions in a similarly complex manner.

Restrictions on the use of certain roads are not new — indeed, there is written evidence of such restrictions dating back to ancient Rome.[22]

---

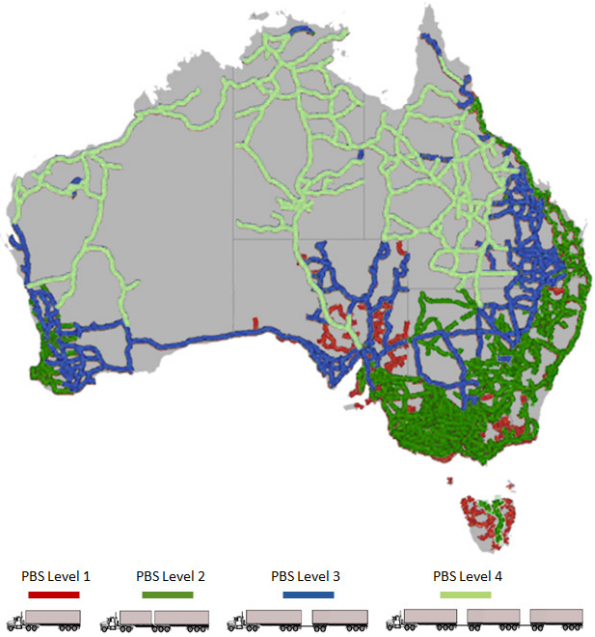
19 Restricted access vehicles are vehicles that either do not comply with prescribed mass or dimension limits under the HVNL (in general, either wider than 2.5 metres, higher than 4.3 metres or longer than prescribed lengths for the specified vehicle configuration, or exceed the allowable mass limits based on vehicle axle groups) or are specific large combinations (including road trains, B-doubles and livestock carriers) (NHVR 2016h, 2016k).

20 The HML scheme allows particular heavy vehicles to carry additional mass providing that the vehicle is fitted with road-friendly suspension and that the operator holds NHVR accreditation (NHVR 2016e).

21 The National Class 2 Heavy Vehicle B-double Authorisation (Notice) 2014 (No. 2).

22 Land transportation, in particular, was heavily regulated in ancient Rome. Many streets were limited to smaller vehicles — much like today where Australia has different routes for B-double and larger vehicles (Kaiser 2011).

Figure 8.1 **Road access as specified by Performance Based Standards (PBS) road class**[a]



[a] PBS vehicles are vehicles which have been assessed according to a set of safety and performance standards. The PBS system is designed to provide operators with flexibility in vehicle design and operation. Road networks PBS level 1 is similar to general access. PBS level 2 is similar to B-double routes. PBS level 3 is similar to type 1 road train routes. PBS level 4 is similar to type 2 road train routes. Lower levels can access higher level routes.

Sources: adapted from NHVR (2016g, 2016i).

Heavy vehicle road access regulations affect productivity

Heavy vehicle road access regulations can limit the ability of operators to transport goods by road to their destination in the most efficient manner — either by the most direct route, by the preferred vehicle type or during preferred times. The evidence presented to this inquiry highlighted the burden of having different vehicle dimension and weight restrictions across the road network — it forces operators to resort to inefficient vehicle combinations, and can preclude opportunities to use more productive vehicle combinations (appendix C).

The National Transport Commission gave this example:

> … [in the Sunraysia region on the border of New South Wales, Victoria and South Australia, the] most efficient vehicle for transporting the grapes would be a road train, but these are not currently permitted on a stretch of highway linking two of the states … Consequently, wine producers use less efficient semitrailers, leading to more trips, more emissions and higher consumer prices … the cost to the wine industry [from using semitrailers instead of road trains] in the region, is around $1.6 to $2 million per annum. (NTC 2011, pp. 5–6)

Heavy vehicle operators must either employ a vehicle combination or loading method that meets all requirements along the route (the lowest common denominator approach) or de-couple larger heavy vehicle configurations outside the restricted area and continue on smaller approved truck combinations (AUSVEG 2015b; Retailer and Supplier Roundtable Ltd 2014; Larry Acton, sub. 55; Sheepmeat Council of Australia and Cattle Council of Australia, sub. 88, att. 1), which in turn increases transport and operational costs (box 8.1).

Where regulatory settings support more extensive use of high productivity (restricted access) vehicles, this has the potential to lead to improvements in the efficiency of agricultural supply chains (Australian Forest Products Association, sub. 11; Ronda and Allen Harmer, sub. 15). The Australian Food and Grocery Council noted that:

> While there has been a lot of focus on the use of high productivity freight vehicles on major freeways, the collection of grains, fluid milk, fruit, vegetables and livestock from farms is a critical opportunity for the use of [high productivity freight vehicles]. Industry acknowledges the investment required to support high productivity freight vehicles, particularly in rural areas, and the regulatory change required. (AFGC 2014, p. 8)

Interjurisdictional inconsistencies remain a concern

Inquiry participants pointed to inconsistencies in heavy vehicle regulations between jurisdictions. These inconsistencies remain despite the establishment of the NHVR and the adoption of the HVNL in six jurisdictions. Participants said that inconsistencies make it difficult to transport inputs and agricultural products efficiently between farms and delivery destinations. The National Farmers' Federation, for example, said:

> … the move towards a single National Heavy Vehicle Regulator … is a step in the right direction and will lead to productivity improvements across the nation, but there is still a lot of work required to implement consistent requirements across states. (sub. 61, p. 18)

GrainGrowers argued that 'unworkable inconsistencies in regulations between states … make it difficult to transport grain or oversize machinery across state borders' (sub. 73, p. 13). Voice of Horticulture (sub. 42) provided several examples of the effects of interjurisdictional variations (box 8.2).

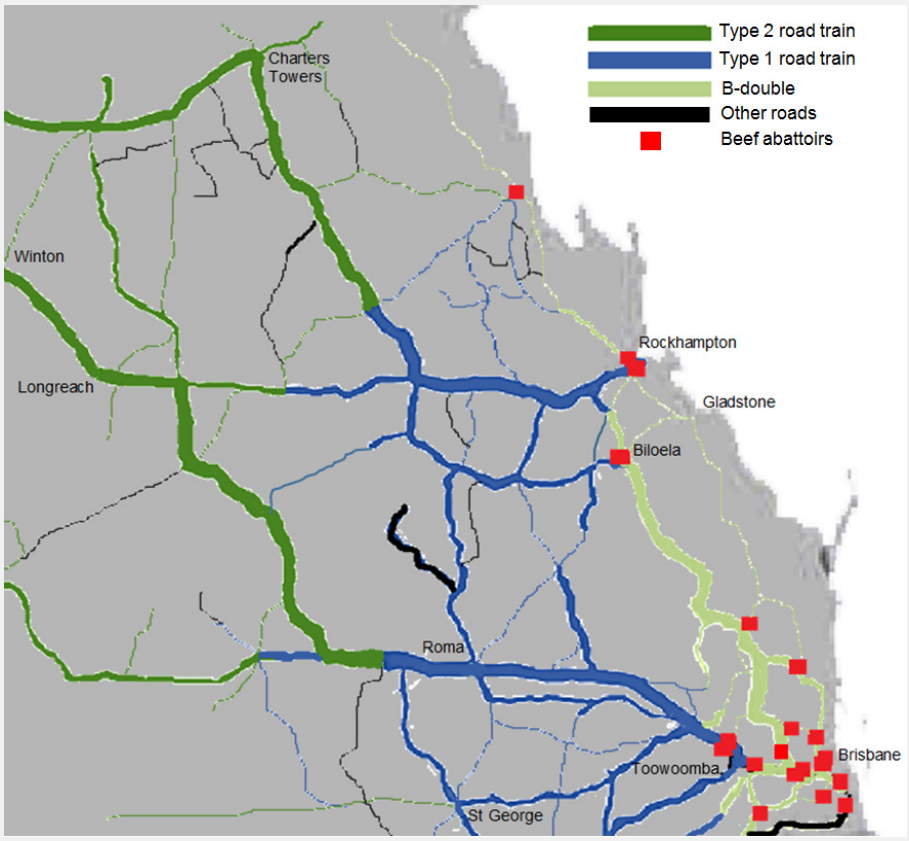
Inconsistencies also persist because Western Australia and the Northern Territory are not currently participating in the HVNL. The Consolidated Pastoral Company said that:

> The three heavy vehicle transport systems still operating across northern Australia [in Western Australia, the Northern Territory and Queensland] cause additional reporting and recording requirements. This generates extra work and therefore extra costs, for businesses than would otherwise be the case if a truly national system were in place. (sub. 71, p. 33)

Box 8.1 Heavy vehicle access restrictions in Queensland

Cattle freight routes

Cattle producers in Queensland can use road trains inland but the road network used to move stock towards the coast, where most of the saleyards, feedlots and abattoirs are located, only allow smaller heavy vehicle combinations (as shown in the figure below[a]). Loads might need to be broken down into smaller units, sometimes more than once, due to road restrictions. For example, moving cattle from Longreach to an abattoir in western Brisbane can mean downsizing the vehicle twice — once near Roma and again at Toowoomba. The inability to use larger heavy vehicles for the entire journey increases transport costs considerably. By one estimate, using a B-double for the entire journey to transport 120 cattle across 1000 kilometres can cost about 37 per cent more than using a road train (Goesch et al. 2015).



Road train access to Gladstone Port

Restrictions on road train access to Gladstone Port means that all road train freight originating from southern inland areas must drive north to Gracemere (near Rockhampton) and be broken down to B-doubles before continuing to the port. The diversion is mainly because Sheepstation Bridge on the highway connecting Biloela and Gladstone Port is unable to accommodate road trains. This diversion is estimated to double the travel distance (a further 100 kilometres) from Biloela for vehicles travelling to Gladstone Port (RDAFCW 2015).

[a] The width of the line used to depict each road represents the frequency with which that road is used by cattle transport vehicles. Type 2 road trains are the largest, and B-doubles the smallest, of the three heavy vehicle types displayed.

Source: adapted from Goesch et al. (2015).

Box 8.2 The effect of interjurisdictional variations in heavy vehicle regulations on the horticultural sector

Voice of Horticulture provided an example of the way that variations in heavy vehicle regulations restrict opportunities for more efficient freight movement:

> Geoffrey Thomson Holdings Limited, a vertically integrated horticultural business based in Shepparton, Victoria, operates a fleet of heavy vehicles transporting fruit from their packing shed to a number of interstate wholesale markets and supermarket distribution centres. Their B Doubles [under Victorian laws] are able to operate up to a 68[.5] tonne gross vehicle weight … However, to access the Brisbane Market and Brisbane distribution centres the trucks must use [New South Wales (NSW)] roads, and the NSW State regulations stipulate that without operating the Intelligent Access Program (IAP) the maximum allowable weight under the Concessional Mass Limit (CML) is 64.5 tonnes. Consequently all trucks departing Shepparton to either NSW or Queensland must use the lower maximum weight of 64.5 tonnes, which reduces efficiencies and sales volumes, and adds to both costs and extra vehicles on the roads … to gain the higher 68 tonne permit for NSW the company would have to invest in additional hardware and systems in order to comply with the requirements of the NSW IAP. Investment of this kind is seen as wasteful and duplicates the costs already invested to achieve Victorian Accreditation … (sub. 42, p. 17)

Voice of Horticulture also pointed to interjurisdictional variations in conditions for increased mass limits (such as enrolment in the Intelligence Access Program described in box 8.5 below) that lead to inefficiencies:

> Maximum load restrictions are also a significant issue for many growers and exporters of dense products and differences in maximum load restrictions between states have a real impact on the efficiency of transport through wasted container space … Horticulture exporters usually use 40 foot containers weighing 13 tonnes when empty for transporting product. However, because of weight restrictions horticulturalists cannot fill the container without exceeding maximum weights. The container has a capacity of 30 tonnes but can only yield 24.3 tonnes due to weight limits – 5 tonnes short. (sub. 42, p. 17)

And commented on the additional burden that arises because states and territories are able to make derogations to the Heavy Vehicle National Law:

> … a number of states, such as NSW, have introduced variations to the national model. This simply defies the point of harmonisation. For example, operators from NSW that choose to trade interstate will continue to face the paperwork juggle to ensure that compliance with both state and national laws are met. (sub. 42, p. 17)

Source: Voice of Horticulture (sub. 42).

NT Farmers said that 'the movement of goods and machinery across jurisdictional boundaries is the main concern' (sub. 8, p. 2). Co-operative Bulk Handling (CBH) Group said that in Western Australia, 'a road pathway can pass through various State and Local Government instrumentalities with each proffering a different [restricted access vehicle] rating making it impossible for users to have any clarity regarding an acceptable consistent pathway for a particular vehicle configuration' (sub. 36, p. 8). Similarly, AgForce called for greater consistency in road ratings as a way to improve road network access:

> Inter-jurisdictional (local and State Government) harmony for the rating of road networks to improve the freight-efficient movement of agricultural products, so that costly changes to vehicle configurations and loads do not have to be made at borders and to simplify the compliance task for drivers of heavy vehicles. (sub. 17, p. 10)

Local government 'first and last mile' restrictions

Local governments manage about 80 per cent of Australia's 811 000 kilometres of public roads (AustRoads 2010). Local governments determine which restricted access vehicles are permitted to use their roads, and the conditions under which such vehicles must operate. The HVNL recognises local governments as road managers (NHVR 2013), and so vehicle operators require consent from local governments in order to access local roads (though, as noted above, the NHVR acts as a 'one stop shop' — heavy vehicle operators contact the NHVR, which then obtains consent from all relevant road managers including local governments).

Concerns about restricted access for high productivity vehicles on the local roads used at the start and end of a freight journey are often referred to as the 'first and last mile' problem (ALGA 2016). Participants commented that the first and last mile problem is limiting improvements in freight efficiency, and that many access decisions made by local governments are unnecessarily risk averse (box 8.3).

Local government restrictions can also reduce the effectiveness of other measures designed to increase heavy vehicle productivity. For example, the New South Wales Livestock Loading Scheme was introduced in 2012 in order to address longstanding concerns by livestock businesses, including the Australian Lot Feeders' Association (ALFA 2014), that differences in loading limits for livestock transport limit the efficiency of livestock transport across state borders. (Victoria and Queensland have volumetric loading limits for livestock vehicles.) However, according to Transport for NSW (2015), local government restrictions on HML vehicle access means that the HML road network does not provide adequate connectivity for the scheme to be successful. This highlights the way that local government restrictions can act as an impediment to productivity-enhancing measures introduced by state and territory governments.

Lengthy processing times for road access permits

Heavy vehicles are required to obtain permits to access many roads, in order to minimise risks to public safety and infrastructure from their use of those roads (NHVR 2016b). Despite the NHVR's role as a one stop shop for operators to apply for road access permits, many inquiry participants (including AgForce, sub. 17; Australian Livestock and Rural Transporters Association, sub. 47; Cotton Australia, sub. 23; Office of the NSW Small Business Commissioner, sub. 4) considered the process of obtaining road access permits to be unnecessarily lengthy and onerous.

Several participants considered the statutory timeframe of 28 days for processing permits to be too long, particularly for primary industries (Australian Livestock and Rural Transporters Association, sub. 47; Cotton Australia, sub. 23).

Box 8.3 Local government restrictions on heavy vehicle road access

The National Farmers' Federation claimed that restricted access for high productivity vehicles on the local roads used at the start and end of a freight journey — often termed the 'first and last mile' problem — is limiting improvements in freight efficiency.

> Inefficiencies abound when a truck or truck configuration cannot drive the full distance of a freight journey; this is the 'first and last mile' issue. The next generation of freight vehicles or 'interoperable high productivity vehicles' (long, double stacked trains and B triple or super B double trucks at higher mass limits) offer improvements in freight efficiency but their use is currently restricted. (sub. 61, p. 18)

The Australian Livestock and Rural Transporters Association raised concerns about the basis upon which local governments restrict heavy vehicle road access.

> Many local road managers simply deny access because of unfounded or ill-informed concerns about safety or local amenity impacts. Decisions about HPV [high productivity vehicles] access should be based on engineering principles, network design and measurable impacts, not underlying attitudes towards industry or heavy transport. (sub. 47, p. 8)

The Pastoralists and Graziers Association of Western Australia expressed similar concerns.

> In the agricultural areas of Western Australia movement of livestock, grain harvests, fertilizer and agricultural lime sands starts and finishes on local roads. Local government authorities are not always adequately resourced to operate these roads, and preservation of the road to avoid maintenance expenditure is often a priority over their use for economic activities. (sub. 70, p. 7)

The Queensland Audit Office found that many stakeholders shared this view.

> Stakeholders told us that some local governments do not have the resources and expertise readily available to make evidence-based consent decisions [on heavy vehicle road access] that often require a technical assessment of risks to the relevant infrastructure on those roads. (QAO 2016, p. 4)

And Australian Dairy Farmers pointed to access approval delays arising at the local government level.

> It appears that many councils have not classified roads within their jurisdictions … or do not possess a detailed understanding of the load-restrictions, to determine whether the road may or may not be used by PBS vehicles. This is causing lengthy time-delays when processing companies are seeking to register new milk collection vehicles on regional roads. (sub. 63, p. 5)

The 28 day period for permit processing under the HVNL has been designed in response to the requirement that the NHVR obtain consent from every relevant road manager each time a permit is applied for. The majority of the 28 day period is taken up by state and local government processing — according to the NHVR's 2014-15 annual report, it took an average of 23.5 days to process heavy vehicle access permit applications, of which about 4 days were taken up by the NHVR and the remainder by state or local governments (NHVR 2015a).

The systems used by local government to assess road access applications by high productivity vehicles are often not well developed (PC 2012b), which can increase the time taken to process access permits. According to Cotton Australia, some local governments have only recently become aware of their responsibilities as road managers:

> While in theory the advent of the National Heavy Vehicle Regulator is meant to streamline transport movement approvals … it has also led to an increase [in] local governments requiring the issuing of permits for local road movements, as they become more aware of their role as

> road managers. While some road managers are better than others, the fact remains that they have 28 days to respond to applications made through the NHVR, and this does represent an unjustified burden on road users. (sub. 23, p. 16)

The Queensland Audit Office said that 'the NHVR was not effective in supporting local government road managers to prepare for processing the volumes of heavy vehicle requests relating to their roads — some had not been involved in processing permits before the HVNL, despite the previous road access laws requiring them to [do so]' (QAO 2016, p. 5).

In response to industry concerns about delays in processing permit applications, permit processing for travel wholly within state borders was handed back to the relevant state road agencies temporarily (except in Tasmania). According to the Queensland Audit Office, this situation arose because the NHVR agreed to implementation timeframes for assuming responsibility for processing road access permits that:

> … were overly ambitious. [The NHVR] did not allow sufficient time to plan and deliver the new access management arrangements successfully. Funding was also uncertain due to the different arrangements entered into with the states and territories. (QAO 2016, p. 6)

It is uncertain when these functions will be passed back to the NHVR, although it is expected to take two more years for the NHVR to develop mature processes (NTC 2014).

In contrast, in Western Australia, the Commissioner of Main Roads has the power to issue permits (local government approval is not required) and, according to the Western Australian Government, this provision:

> … allows WA to ordinarily issue permits within a 24 hour period. Mains Roads WA has collaborated with local governments to develop a series of networks and pre-approved routes which are matched to the various heavy vehicle types, rather than seek individual approvals [from] local governments, who do not have the resources to process permit requests. (Western Australian Government, sub. 54, p. 24)

The Western Australian Government said that if Western Australia was to adopt the national law it could 'create additional regulatory burden for farmers, particularly in relation to road access and heavy vehicle driver fatigue' (sub. 54, p. 25). The Northern Territory Department of Primary Industry and Fisheries also said that the introduction of the HVNL in the Northern Territory would need to be considered in relation to the Land Transport Standards which 'will place further restrictions on the transport industry' (sub. 67, p. 4).

Other issues in heavy vehicle regulation

Livestock transport regulations

Some transport regulations, especially those relating to livestock transport, have a particular impact on the agricultural sector. The National Farmers' Federation highlighted

inconsistencies in fatigue management regulations and animal welfare requirements for transport of livestock:

> The greatest impact of these is in remote areas where drivers work / sleep / live in their trucks and are required to comply with both fatigue management laws and also standards for transport of livestock, in regions often without facilities to rest livestock within the specified period … it is in these situations where rigid rules can have perverse outcomes and a certain level of flexibility and common sense is required to ensure positive outcomes for both the welfare of the driver and the livestock. (sub. 61, p. 18)

In September 2015, the NHVR introduced the Livestock Transport Fatigue Management Scheme. The scheme 'provides a pre-approved template Advanced Fatigue Management (AFM) accreditation system designed to give livestock and rural transporters the flexibility to respond to the dynamic, uncertain and complex livestock transport task' (NHVR 2015c, p. 4). To the extent that this scheme increases flexibility and reduces administrative burden, it should make it easier for operators to comply with both livestock transport and fatigue management regulations.

Time-of-travel restrictions

In many jurisdictions, there are time-of-travel restrictions which limit the hours or days on which heavy vehicles are permitted to operate. For example, certain classes of vehicles are not permitted on some roads between sunset and sunrise, or on public holidays.

As most agricultural goods are perishable, limitations and differences in time-of-travel regulations can impede productivity and increase operating costs (Retailer and Supplier Roundtable Ltd 2014). For example, across New South Wales, Victoria and Queensland, different time-of-travel restrictions apply to different heavy vehicles, with night travel regulations in New South Wales being the most restrictive of the three states. Requiring heavy vehicles to travel only during daylight hours or in certain specified time periods can also exacerbate road congestion, particularly along major routes leading to key ports or airports that are shared with light vehicles (Goesch et al. 2015).

In addition, limiting stock pick-ups to daylight hours can compound the effect of other restrictions on stock movement times, such as the limited opening hours of quarantine facilities.

A disconnect between road revenues and expenditure

Variation in heavy vehicle access regulations can be efficient, as the road network operating environments differ in different parts of the country. However, it is important that variation is minimised, so that the road network supports moving goods as quickly and efficiently as possible, particularly given the perishable nature of many agricultural products.

One reason for road access restrictions, particularly on local roads, is the disconnect between road revenues and government expenditure on upgrading and maintaining road networks. Heavy vehicles are a significant contributor to road wear and tear and road damage, and the shift from rail to road freight has exacerbated the pressure on local roads (section 8.2). As the Commission noted in its inquiry into public infrastructure:

> Under current arrangements, investment in roads is subject to political pressures arising from annual budget processes and election cycles. Decisions are often based on inadequate and non-transparent information and assessment of the costs and benefits of road projects. (PC 2014c, p. 20)

And as Terrill, Emslie and Coates said in a report for the Grattan Institute:

> Too often, politics comes ahead of the public interest. Too much has been spent on highways that are not especially important to the economy, but are popular with local voters. Decisions on particular projects are dubious or made on the basis of weak or undisclosed business cases. The Commonwealth and Victorian governments spent $438 million on the Geelong to Colac road, not a project of national economic significance … Although governments have funded many worthwhile projects over the past decade, the overall investment has been poorly directed. (2016, p. 2)

The disconnect between road funding and expenditure means that there is no mechanism to directly allocate road-related revenues to road investments, and it is difficult for road managers to recover the full cost of supplying, maintaining or upgrading road infrastructure so that it is suitable for heavy vehicles. As a result, road managers, including local governments, restrict heavy vehicle access to protect road assets.

Also, almost 60 per cent of local governments are in rural and remote areas, where there are fewer residents and smaller revenue bases to support regulatory functions (Nguyen et al. 2013; PC 2012b). Recent experience with the Roads to Recovery (R2R) Program and the Bridges Renewal Programme indicates that local road managers sometimes cost shift when Australian Government funding is made available for roads (that is, they substituted R2R program funds for their own expenditure on roads) (ANAO 2010, 2016). Consequently, local government expenditure on roads may not always be at the level necessary for asset maintenance and renewal. Participants to the Commission's inquiry into public infrastructure reported that local governments frequently neglect basic maintenance (PC 2014c).

Reducing the burden of heavy vehicle road access regulations

Removing unnecessary restrictions and variations

One way to reduce road access restrictions is to increase the number of roads formally assessed and approved for use by high productivity vehicles. Generally, these approvals are published as gazette notices, which are government declarations that particular classes of vehicles are permitted on particular routes or areas, from which they would otherwise be

prohibited. Making greater use of gazettal notices would enable more efficient road access — as by removing the requirement to obtain a permit for the roads specified in the gazettal notice, it would enable freer access to those roads by all heavy vehicle operators. Schemes in place in Queensland and South Australia (box 8.4) are also reducing the need for, and time taken to, obtain road access permits.

Box 8.4 Examples of initiatives to reduce road access restrictions

Initiatives are underway in some states to reduce heavy vehicle road access restrictions.

- In South Australia, road users can initiate road assessments for proposed roads for gazettal. Once an applicant obtains a road assessment from an authorised assessor and clearances from the local government road manager for the proposed route (and from the railway authorities if level crossings are involved), they can lodge a final report with the South Australian Department of Planning, Transport and Infrastructure for approval and gazettal (SADTEI 2008).
- Through the Road Alliance initiative (QDTMR and LGAQ 2013), the Queensland Department of Transport and Main Roads funded all Performance Based Standards route assessments on both state and local government roads in Queensland, along with other routes deemed important (PC 2012b). The Queensland Government is also working with the agriculture industry to increase transport efficiency by reducing the need for permits, through a range of special access schemes for the agricultural sector (QDTMR 2013; Queensland Department of Agriculture and Fisheries, sub. 58).

Ideally, permits would only be required when there is a material risk to public safety or infrastructure that must be managed on a case-by-case basis.

For jurisdictions participating in the HVNL, consolidating the state notices into a single national notice would minimise compliance effort for the heavy vehicle industry (provided the requirements contained in the notice are truly national, and are not simply a list of each jurisdiction's requirements). Replacement of a number of jurisdiction-specific notices and initiatives with single national notices that apply across states and territories, is already part of the NHVR's work program (NHVR 2015a). If implemented in a truly national fashion, in time this should reduce the number of permits road users need to obtain to use the road network, and reduce the effort that transport operators must invest to ensure that they are compliant with the different requirements published in each of the notices. Ensuring that road users can identify the road access conditions that apply to each road through the online NHVR journey planner (see below) would further reduce compliance efforts for operators.

The introduction of the HVNL and creation of the NHVR was an important first step to remove unnecessary restrictions and variations in heavy vehicle regulation, but the NHVR is still a work in progress.

New regulatory bodies take time to fully develop mature procedures, processes and staff capability, so stakeholder concerns over the processing time for access permits under the

national system could be resolved as the NHVR matures. For example, one NHVR strategy is to 'encourage road managers to grant pre-approvals of access so that it is not necessary to consider applications for specified types or classes of heavy vehicles' (NHVR 2015a, p. 20). To support this, the NHVR has recently released 'heat maps' which show where demand and blockages for road access permits are located (such as due to pavement conditions). The 'heat maps' have allowed the NHVR to target efforts to obtain pre-approvals, and allowed adjoining local governments to address infrastructure requirements (NHVR 2016f).

DRAFT FINDING 8.1

Despite the commencement of the Heavy Vehicle National Law and the establishment of the National Heavy Vehicle Regulator, there remain significant variations and inefficiencies in heavy vehicle regulation, including delays in processing road access permits.

DRAFT RECOMMENDATION 8.1

States and territories that are participating in the Heavy Vehicle National Law should increase the number of routes that are gazetted for heavy vehicle access. Permits should only be required in locations where there are significant risks to public safety or infrastructure that must be managed on a case-by-case basis.

There are arrangements in South Australia to allow road users to propose and undertake road route assessments for gazettal, and in Queensland to fund road assessments and gazettals on both state and local roads. These arrangements should be considered for adoption in other jurisdictions or expansion in respective states.

Addressing information gaps on road investment priorities

Building better and more reliable information on the condition of public roads and bridges by compiling road asset reports would improve the prioritisation of investment needs and transparency of decisions. It could also allow road investments to be directed to where they would achieve the greatest net benefit, and ultimately minimise the need for road access restrictions. Better information could also contribute to public confidence that road revenues are being invested effectively.

There has been some progress developing reliable road asset reports, but they appear not to be widely adopted. For example, Infrastructure Australia commissioned a pilot for road asset reporting in 2012 for over 13 000 kilometres of road with the co-operation of eight local governments (Infrastructure Australia 2013). At a national level, one of the recommended measures adopted from the (now ceased) Heavy Vehicle Charging and

Investment (HVCI) reform project was the development of road asset registers and assessments of road conditions according to agreed standards (QDTMR 2015). The first edition of the road asset registers and infrastructure ratings, along with investment plans, for designated key freight routes was published in early 2016 (TIC 2016). Creating a consistent, national road assets register that includes local roads will be important for addressing the first and last mile problems affecting farm businesses.

Better data on road user needs would complement road asset reports by identifying where investments are needed to meet user demand. This information would be necessary to direct investments even if a transition to full mass-distance-location pricing (see below) does not take place. Data on road use could feed into road asset reports to justify investment decisions, and instil road user confidence that they will benefit from future reforms to road charges. Identifying important access points would also ensure road modifications (such as the installation of guard rails on a road blocking access to an adjacent property, reported by one of the farmers who participated in the Commission's case studies — appendix C) do not adversely affect farm vehicle movement.

More information is becoming available on road user needs.

- An online map that identifies national key freight routes[23] was released in October 2015 to assist government planning and investment to enable 'as of right' B-double access across all road key freight routes (TIC 2014, 2015). (As mentioned, road asset registers for those routes were released in early 2016.)
- The interactive online journey planner[24] developed by the NHVR in late 2015 allows operators to map routes and request access permits for proposed routes. The NHVR could use data from its journey planner and 'heat maps' to identify routes with the greatest demand and where 'hot spots' for high productivity vehicle access should be targeted to extend the key freight routes.
- Simulated maps of road use, such as modelled cattle freight routes using the National Livestock Identification System data (Goesch et al. 2015; Higgins 2013), could further inform road investment decisions to meet farm business needs.

Better information on road user needs and investment priorities is fundamental to the success of institutional reforms necessary to correct the disconnect between road revenues and road investments. This information should be easier to obtain once vehicle telematics becomes more widespread (see below).

Introduce direct road user charging

Currently, heavy vehicle charges are based on annual road expenditure, and are collected through a combination of registration fees (collected by state and territory governments)

23 http://maps.infrastructure.gov.au/KeyFreightRoute/

24 http://gis.nhvr.gov.au/journeyplanner/

and fuel-based charges (collected by the Australian Government). The structure of this system means that heavy vehicle charges do not reflect the actual cost of use, and in the long term road investments could diverge from road user needs as there is no price signal to direct investments.

A direct (or more cost-reflective) road user charging system would support better road investment decisions. It could also bring about efficient infrastructure use and provision as road managers would be better informed about the demand for road capacity and quality. (However, some roads will always need to be funded by the government on community service grounds.) Efficiency could be increased while maintaining revenue neutrality — that is, any funds raised through road user charging could be offset by reductions in registration fees or fuel excise, so that government revenue remains unchanged.

The current system of charging by averaged road costs across the network is also inequitable as low-cost operators effectively cross-subsidise high-cost operators. This charging system particularly disadvantages the agricultural sector — farm businesses generally own at least one heavy vehicle that they use for less than half the year, while representing 27 per cent of freight volume on the road network (BITRE 2015b; NFF 2010).

The inefficiency of registration fees was highlighted by the Australian Livestock and Rural Transporters Association.

> The national registration fee for a rural double road train combination is currently $14,205, approximately the same fee as an inter-capital line haul B-double combination of $14,769. However road network access, attributable road wear and infrastructure spending is vastly different. A line-haul B-double will typically travel over 400,000 kilometres annually on some of the best and most expensive roads in the country. In contrast, a road train typically travels less than half of this distance and on a lower quality and more restricted road network. In effect, road train registration fees are subsidising infrastructure spending on parts of the network from which they are prohibited. (sub. 47, p. 10)

Direct road user charging could also remove price distortions in the choice between transport modes and drive appropriate investments along the supply chain. Not only could road pricing reform improve road networks, it could also reduce bottlenecks around ports and provide price signals for modal choice between rail and road (ACCC 2013a). For example, as the West Wimmera Shire Council (sub. 49) pointed out, the poor condition of road networks leading to the Port of Portland has a significant effect on agricultural producers. Cost-reflective pricing would address such concerns by facilitating an efficient level of investment in road networks leading to ports.

An additional feature of more cost-reflective road pricing could involve adjusting charges for pavement wear based on axle configuration, as damage is related to a truck's weight per axle (Winston and Mannering 2014). This pricing adjustment could incentivise the uptake of truck designs that minimise pavement damage.

As a first step, better data on road use are needed to direct investments and to build public confidence that road reforms would lead to net benefits. The advent of new technologies

(vehicle telematics) will present opportunities for cost-reflective road pricing taking into account location, time and congestion (Harper et al. 2015; PC 2014c), and allow road managers to enforce safety standards efficiently (Winston and Mannering 2014) (box 8.5).

Box 8.5 Intelligent Access Program

The Intelligent Access Program (IAP) is a voluntary national program that is built around using vehicle telematics and Global Navigational Satellite System technology to monitor participating heavy vehicles' compliance with road access conditions. The objective of the IAP is to give road managers confidence to allow heavy vehicles access to the road network.

The IAP remotely collects data on the time, speed and location of heavy vehicles through an in-vehicle unit supplied by a certified IAP service provider, or through existing in-vehicle units that have been certified for delivering IAP services (TCA 2016).

In New South Wales and Queensland, operators running at higher mass limits are required to enrol in the IAP, to enable monitoring of operator compliance with approved routes, times and speeds (NHVR 2016e). While the focus of the IAP is currently on compliance (road authorities currently only receive data on access breaches), intelligence gathered via vehicle telematics would be valuable for informing road investment decisions and logistical coordination of freight to resolve bottlenecks.

The shift to a mass-distance-location charging model (requiring the monitoring of total distances travelled, road use and actual vehicle mass) has been recommended previously by the Productivity Commission and other organisations (NCA 2014; NTC 2008b; PC 2006a, 2014c). This charging option was also being considered under the now ceased HVCI reform project (HVCI 2014).

The Australian Government has stated its support for the Competition Policy Review recommendations relating to more cost reflective road pricing for heavy vehicles (Fletcher 2015). The Transport and Infrastructure Council has also acknowledged that more direct user charging is needed to fully close the link between the needs of heavy vehicle users and the charges they pay but is of the view that these linkages can be improved within the current heavy vehicle charging system (TIC 2016).

In the Commission's view, there is a limit to the extent to which the current road charging system could be refined. Repeated attempts to achieve greater precision have increased the complexity of the current system, and there is a limit to how much more it could be altered to reflect actual road use and expenditure (NTC 2013). The proposed models for collecting and distributing road revenues developed by the ceased HVCI reform project, and outlined in the Commission's 2014 inquiry into public infrastructure, should be considered in the road pricing reform process.

A Road Fund model — an institutional framework that involves a dedicated body, closely oriented to road users, and responsible for managing the allocation of road revenues to road projects — should be considered in the first instance. The Road Fund model would integrate the tasks of road funding and road provision, thereby enabling road investment

decisions to be considered by road users and road providers on a portfolio wide basis. This would also help to ensure that road investments are directed to where they have the highest value to road users. Accurate road asset reports and road use information would be particularly important for this purpose. Another advantage of the Road Fund model is that:

> … tradeoffs and project allocations would be subject to wider scrutiny, strengthening the financial discipline on investment and expenditure decisions and leading to improved road services. Greater visibility of the amount spent on roads and the level of services provided may also help to improve community acceptance of direct road user charges. (PC 2014c, p. 315)

In addition, hypothecating road revenues in a way that better reflects road user needs would help demonstrate to road users that road charging reforms are not aimed at reducing infrastructure funding levels or increasing government revenues, but are instead aimed at more efficiently and effectively allocating road revenues.

A potential format of a Road Fund model, and the importance of hypothecation of road revenues to the Fund, are discussed in detail in the Commission's inquiry into public infrastructure (PC 2014c).

DRAFT RECOMMENDATION 8.2

The Australian, state and territory governments should pursue road reforms to improve the efficiency of road infrastructure investment and use, particularly through the introduction of road-user charging for selected roads, the creation of Road Funds, and the hypothecation of revenues in a way that incentivises the efficient supply of roads.

Regulations for moving agricultural machinery on public roads

Many agricultural machines are large and exceed prescribed mass and dimension limits, and are consequently restricted access vehicles that require permits to operate on public roads. Multiple permits can be required to move agricultural machines on public roads.

- *A road access permit*. Permits for moving agricultural machines on public roads are issued by:
  - the relevant state or territory road authority and local governments, for moves entirely within New South Wales, Victoria, Queensland, South Australia and the ACT
  - the NHVR, for moves within Tasmania, and between participating jurisdictions
  - the NHVR and the roads authorities of Western Australia or the Northern Territory, for moves between participating jurisdictions and Western Australia or the Northern Territory.

There is also a system of gazettal notices, under which the gazettal notice replaces the permit for certain specified types of machinery. Permits might only be granted for daylight hours (such as in New South Wales).

- *Third party approvals or permits*. Where the dimensions of the vehicle might interfere with public infrastructure (such as railway lines or overhead wires), the applicant must seek approval or permits from relevant third parties, such as utility companies and rail companies, before the road access permit is approved. Permits from third parties can be required each time the machine is moved and can be valid only for a specified time bracket on the particular day.

In some cases, a condition of the road access permit will be that a pilot vehicle or police vehicle must accompany the machine on public roads.

Restrictions on moving agricultural machinery impose a considerable burden

Many inquiry participants expressed considerable frustration with the requirements for moving oversized agricultural machines on public roads (including Agforce, sub. 17; Australian Sugar Milling Council, sub. 68; Karen Baines, sub. 13; Canegrowers, sub. 22; Farmer from southern NSW, sub. 83; Office of the NSW Small Business Commissioner, sub. 4; Voice of Horticulture, sub. 42; Wimmera Development Association, sub. 19). The National Farmers' Federation said that:

> Agricultural equipment and vehicles are increasing in size and dimension, making the transport and movement of equipment more complex. Travelling on and crossing critical, major and minor roads … is becoming more restrictive. Safety is imperative, however it needs to complement farming activities, cropping cycles and harvest timeframes. (NFF 2014a, p. 12)

Participants expressed concern that the conditions on the permits can be restrictive and the process to obtain them time consuming and inflexible (box 8.6), including for third-party railway crossing permits (GrainGrowers, sub. 73). According to a farmer from southern New South Wales (sub. 83), in one instance, moving an agricultural machine over 14 kilometres in western Sydney required three pilots, a police escort, letter drops to businesses and residents, liaising with two councils and a motorway owner.

The process of obtaining permits can be lengthy, and takes time away from productive activity. As a farmer from southern New South Wales pointed out:

> Farmers have to jump through the same hoops as a business in the city … I obtained my permit after at least 20 hours of office work that took me away from my farm business. I spent hours on the phone with various people trying to work out what I had to do to comply and then hours writing the documents and filing out the forms required … In many instances [farmers] have the physical escorts and flags etc but just haven't done the paperwork to get a permit. (sub. 83, att. 1, p. 1)

Box 8.6 Regulatory requirements for moving oversized agricultural machinery in Capella, Queensland

For a producer in Capella to move an agricultural machine — that is 7 metres wide and 4.8 metres high — for 25 kilometres, the following were required:

- *transport permits* — two permits were required from the Department of Main Roads (the department): one for the machine, and another for the route taken. Each permit was issued by a different section of the department, and needed to be obtained each time the machine was moved
- *railway crossing permit* — a permit was required from Queensland Rail and the application needed to be lodged four days in advance. A new permit was required if the move ended up occurring outside of the nominated time frame. An uncomplicated move, with no overhead wires and infrequent train services (that ran twice a week), costs $100 as the department had to confirm when the train ran. If the department deemed it necessary to send out a flagman the cost would have been $300
- *police escort* — two police drivers needed to be dispatched from the Emerald police station because the machine was 7 metres wide. The cost — $118 per police officer, and 88 cents per kilometre per police vehicle (calculated from the time the police officers depart from and returned to the Emerald police station). The total cost — about $500
- *local government permit, Telstra permit and Ergon Energy permit*. These permits lasted 12 months but needed at least five working days to process.

Source: Ivan Gowlett, pers. comm., 5 May 2016.

One cotton farmer who the Commission interviewed no longer offers the farm's heavy vehicles for contracting work because registering them and obtaining the required permits for moving them on the roads is too difficult and costly. The farmer said that this was a significant forgone business opportunity for the farm business, and it reduces competition in the local market for contracting services (appendix C).

The need to obtain permits can also delay agricultural activities that are time sensitive. For instance, planting takes place when rain arrives, and machines need to be moved across numerous paddocks at short notice. This can lead to significant logistical problems and associated costs. AgForce said that:

> Agricultural producers face unnecessary costs associated with waiting for these permits, such as costs to delayed production and the additional time and energy used in following up applications that should have been processed promptly. Alternatively, they are faced with the risk of operating without a permit due to the serious threat of losing a crop if it cannot be harvested prior to impending adverse weather such as a significant rainfall event. (sub. 17, p. 9)

The NSW Farmers' Association considered that regulations governing the movement of oversized agricultural machines in New South Wales to be excessively risk averse.

> … many of these movements are presently considered to be 'High Risk' by the NSW Roads and Maritime Service (RMS). This is regardless of the actual risk posed by the permutation of the machinery combination and the road route undertaken … a requirement exists to contact the NSW Police regarding escort requirements a minimum of five days prior to the planned

movement and to obtain approval from a Rail Infrastructure Manager if the movement involves traversing a railway crossing. During the time sensitive planting window the period of time required prior to approval constitutes a major cost to a farmer's productivity, or to a contract planting operator's ability to work. (sub. 72, p. 23)

Cotton Australia questioned the rationale behind permit renewals:

> Currently, there are many examples where the farmer must apply for [oversized agricultural machines] permits either on a per-trip basis or an annual basis, and when due for renewal they are in effect automatically renewed (expect for the fact that an application still has to be made). (sub. 23, p. 16)

Curfews on moving agricultural machinery also interfere with farming activities. For example, restrictions on night travel in New South Wales preclude balers from being moved in time for baling hay before dawn, which can limit the efficient operation of hay baling contractors.

There is scope to increase flexibility in regulations relating to agricultural machines

There appears to be some scope to increase flexibility for moving oversized agricultural machines without impacting on public safety. For example, night travel for agricultural vehicles wider than 2.5 metres is not permitted in New South Wales but is permitted in Victoria (NHVR 2015d; VicRoads 2012). The question has to be asked why those vehicles can be safely driven at night in Victoria but not in New South Wales. As a farmer from southern New South Wales put it:

> The only disruption that is caused by a slow moving [oversize or overmass] farming plant on the road is that other drivers may have to slow down for a couple of minutes until the farmer can move over to the side of the road. Drivers are on the whole very courteous and patient and I'm sure the threat of these movements to public safety has been over-stated and over-regulated. (sub. 83, att. 1)

Agricultural machines (and other vehicles) should be afforded the greatest flexibility for moving on public roads, once any impacts on public safety, amenity and infrastructure are addressed. In locations where noise and infrastructure constraints (such as the presence of overhead wires) are not concerns, restrictions for agricultural machines could be replaced with precautions to alert other drivers to the presence of the agricultural machine, or be allowed exemptions from permits during cropping season. Concerns over recovering the cost of any eventual damages caused by agricultural machines could be better addressed through requiring adequate insurance cover for the vehicle, rather than through stringent conditions on the movement of agricultural machines.

There are ways to reduce the time and cost burden for obtaining permits to move oversized agricultural machines. In particular, permit validity periods could be extended for low risk routes.

- The reason for requiring a permit from the NHVR or road manager for each journey for oversized agricultural vehicles is unclear, and exemptions could reasonably be made

for vehicles that regularly undertake the same journey, particularly if that journey only covers a short distance.

- Navigating machines around fixed infrastructure such as power or telephone lines along the same route could be done without requiring new permits for every move.
- Rail authorities could issue permits that have a longer validity, or allow machinery movements at fixed locations during specified brackets of time in line with train timetables.

There are a range of measures in place to increase flexibility for moving oversized agricultural vehicles at both the state and national levels which could be considered for wider adoption. For example:

- a trial is underway between the Queensland Government, canegrowers and the NHVR to facilitate the movement of oversized vehicles within restricted zones during the crop cycle (Canegrowers 2016)
- the New South Wales Government has introduced an exemption (published as a NHVR notice) from mass and dimension regulations for all farmers and contractors transporting silage trailers, which aligns with Victorian regulations. The exemption allows a laden silage trailer up to three metres wide carrying feed to travel up to 25 kilometres (although not at night)
- oversized agricultural machines in South Australia are exempt from permits so long as they comply with the Code of Practice for Oversize or Overmass Agricultural Vehicles 2008, which clearly sets out the conditions of travel within various zones (SADTEI 2008)
- there are a number of NHVR notices that exempt agricultural machines (and other restricted access vehicles) from prescribed mass and dimension limits or travel conditions (such as bans on travelling on public holidays). The NHVR is also targeting routes expected to experience large numbers of heavy vehicle movements, including for oversized vehicles, for local governments pre-approvals (NHVR 2016j).

A cotton farmer said he was pleased with the recent approval of a new trailer technology that expands the loads each truck can transport from 12 to 18 round modules (cotton bales) — a 50 per cent productivity increase. He pointed out that tailoring restrictions on weight, height and size to local conditions can improve safety and productivity (appendix C).

Increased use of state and national gazette notices could provide greater flexibility in travel conditions that have a significant impact on farm businesses, and potentially eliminate the need to apply for permits for agricultural machines.

DRAFT RECOMMENDATION 8.3

The National Heavy Vehicle Regulator, road managers, and relevant third parties (such as utilities and railway companies) should ensure that requirements for moving oversized agricultural machinery are proportionate to the risks involved. To achieve this they should, wherever possible, make greater use of gazettal notices or other exemptions for oversized agricultural machinery, and issue permits for oversized agricultural machinery that are valid for longer periods and/or for multiple journeys.

Heavy vehicle driver safety regulation

Heavy vehicle operators are required to comply with a number of driver safety regulations, including driving hours and fatigue management, which are necessary to achieve the standards of road safety that the community expects.

The driver safety requirements of the HVNL apply to drivers in participating jurisdictions (box 8.7) where almost 90 per cent of all truck-related fatalities occur (Safe Work Australia 2014). Jurisdictions that have not adopted the HVNL have their own heavy vehicle driver safety regulations.

- Heavy vehicle operators in Western Australia are subject to its fatigue management and chain of responsibility regulations (WAMR 2015).
- The Northern Territory does not regulate driving hours, and regulates driver fatigue as a workplace health and safety hazard. Only 2 per cent of all truck-related fatalities occur in the Northern Territory (Safe Work Australia 2014).

A wide range of other state-based regulations govern heavy vehicle safety, including roadworthiness inspections, use of safety stations, safe following distances, limits on stopping in built-up areas, inspection of driver log books, and speed limits (NSWRMS 2015; NTDT 2014; QDTMR 2016; Queensland Government 2015b; South Australian Government 2016; WARSC 2015).

From 2012 until April 2016, there was also a separate road safety remuneration (RSR) system. As part of that system, the Road Safety Remuneration Tribunal (RSRT) made orders prescribing minimum remuneration and other entitlements for road transport drivers (both employees and contractor drivers), as well as conditions for loading and unloading vehicles, waiting times, working hours, load limits, payment methods and payment periods (RSRT 2013a). Compliance with RSR legislation was administered by the Fair Work Ombudsman.

Views on driver safety regulations

As farm businesses are heavily reliant on heavy vehicles to transport goods, heavy vehicle driver safety regulations can have significant implications for farm businesses' operating costs.

Participants raised relatively few concerns with the driver safety requirements of the HVNL or the requirements of non-HVNL jurisdictions. The NSW Farmers' Association (sub. 72) and the National Farmers' Federation expressed concern about the chain of responsibility requirements, with the latter saying that 'the costs (and continuing regulatory creep) imposed on businesses by the chain of responsibility and fatigue management rules in relation to heavy vehicles is an ongoing concern' (sub. 61, p. 19). Recent reforms to the chain of responsibility requirements (box 8.7) should help to address these concerns.

Box 8.7 Fatigue management requirements under the Heavy Vehicle National Law

Under the Heavy Vehicle National Law (HVNL) and the associated Heavy Vehicle (Fatigue Management) National Regulation, drivers are required to keep work diaries and adhere to maximum work and minimum rest hours.

The HVNL provides for fatigue management exemptions (permits and notices), which enable operators and drivers to apply for work and rest hours, work diary and record keeping exemptions if they cannot reasonably work under the legislated fatigue management requirements.

The HVNL also prescribes a 'chain of responsibility', under which anyone with influence over a transport task — including employers, exporters, producers, corporations involved in consigning, packing, loading or receiving goods — is deemed to be part of the supply chain and shares responsibility for compliance with the HVNL.

Since the HVNL came into effect several changes have been made to reduce the burden imposed by its fatigue management requirements.

- Reforms to chain of responsibility requirements replaced the obligations for all parties in the chain of responsibility with a set of Primary Duty of Care over safety aspects of the transport task. Prior to the reform, all parties had to comply with multiple duties for separate areas such as speed and fatigue, which led to confusion about which parties were responsible for each obligation (NTC 2015).
- The National Heavy Vehicle Regulator has introduced voluntary electronic work diaries — an electronic device that records the driver's work hours — as an alternative to written work diaries (NHVR 2015b).
- Primary producers delivering goods within 160 kilometres have been exempted from work diary requirements (which is usually required for travel over 100 kilometres) (Commonwealth of Australia 2015b). However, farmers may not always be aware of how the system operates in practice, including the availability of exemptions (TDPIPWE, sub. 62; Tasmanian Farmers and Graziers Association, sub. 16).

Voice of Horticulture suggested changes to regulations on driver rest breaks, noting that:

> … under current regulations drivers are required to take an enforced rest break, often within one hour of destination. Enforced rest breaks add substantially to the cost of low value horticultural produce and reduce the produces freshness in the market, further eroding grower returns. (sub. 42, p. 18)

AUSVEG said that 'drivers transporting live cattle have special dispensations due to the welfare of the cargo. Highly perishable goods such as vegetables should be allowed the same concessions' (2015b, p. 6). However, there is no case for extending special provisions put in place to support minimum standards of animal welfare during transportation to products other than animals. Delivering fresh produce to its destination more quickly entails only private benefits. Moreover, there are other avenues — such as the NHVR advanced fatigue management system — through which heavy vehicle operators who desire greater flexibility in work–rest hours can become accredited to do so.

But the main driver safety issue about which inquiry participants expressed concern was the RSR system. Key concerns included that the RSR system overlapped with other regulations, and increased costs without commensurate safety improvements. For instance, the Western Australian Government said:

> The RSRT has powers to issue orders that may duplicate state legislation, particularly in relation to occupational health and safety and road law requirements. Some requirements, such as the contract provisions and road safety plans found in the Road Transport and Distribution and Long Distance Operations Road Safety Remuneration Order 2014, may require administrative resources for farmers who contract transport services and the requirements may not be well understood by the farming community. (sub. 54, p. 25)

The Australian Livestock and Rural Transporters Association said that the RSRT 'is a most concerning source of new and unnecessary red-tape in the agricultural transport supply chain' (sub. 47, p. 3). It pointed to particular difficulties that the agricultural sector faced in complying with the RSRT's remuneration orders (box 8.8). The Sheepmeat Council of Australia and Cattle Council of Australia (sub. 88) and the Consolidated Pastoral Company (sub. 71) also expressed concern about the effect of the RSRT's decisions on the cost of transporting agricultural goods.

The National Farmers' Federation said:

> The [Road Safety Remuneration] Act is fundamentally flawed. It protects major transport and logistic providers against commercial risk by transferring that risk along the supply chain. In this respect, it does not do what it seeks to do; that is, to safeguard small contractors at risk of exploitation or unfair treatment. In our view, the regulatory framework is anti-competitive,
>
> inefficient and expensive. It does not meet the test of 'good regulation' because the costs of compliance far outweigh the benefits of sector-specific rules of this kind, and there is no evidence to justify the continued operation of the laws. The Act should be repealed. (sub. 61, p. 19)

Box 8.8 Rural transporters report difficulties complying with Road Safety Remuneration Orders

Australian Livestock and Rural Transporters Association said:

> The 2014 [Road Safety Remuneration Order] requires written contracts between hirers and contractors before work is undertaken and mandates the use of detailed safe driving plans for all long-distance work. These are new requirements that result in increased paperwork without any significant benefit for the operator.
>
> Very little of the work of most livestock or grain carriers is done under an ongoing written contract. Jobs are more often allocated on a piece-meal basis, as they arise, including during seasonal highs such as the grain harvest. While some carriers have retainers to handle, say, all product moving between a particular feedlot and a certain abattoir which may be amenable to a written contract, most work is ad hoc and at short notice.
>
> Rather than being continuously located at 'the end' of a sub-contracting chain, small rural operators often share work amongst each other and find that they are constantly changing roles. On one day, they will be the 'prime contractor' handing off some work to 'a mate that I trust' and, on the next day, they will act as a sub-contractor, bringing in a backload for 'a mate who can't get out this way' to service his usual client.
>
> This reciprocity and the continuing exchange of roles in rural sub-contracting creates a market that is quite different to that found, for example, in the long-distance 'general freight' business that runs each night on Australia's East Coast highways. (sub. 47, p. 4)

The safety benefits of the RSR system did not justify its costs

The RSR system was in place for less than four years, and the road safety remuneration orders it imposed[25] were in place less than two years or were never enforced (FWO 2016). It is therefore necessary to draw on the literature, in conjunction with participants' views, to consider any benefits that may have arisen from the RSR system.

In this context, an examination of the relationship between remuneration and driver safety behaviour would point to ways the RSR system could have potentially improved road safety outcomes. However, the nature of the relationship has not been clearly established.

- The literature suggests that remuneration can be a reflection of the heavy vehicle driver qualification and skills rather than a factor leading to safer driving. For example, Belzer, Rodriguez and Sedo (2002) concluded that transport companies that pay more can afford to be more choosy and to hire better quality drivers. (The follow-up study, by Rodriguez, Targa and Belzer (2006), confirmed this finding.) The Federal Motor Carrier Safety Administration in the United States also noted that:

  > … a number of studies purport to draw a relationship between driver compensation and safety outcomes, for example, that increased pay is associated with a reduction in crashes. The reviewers offer a cautionary note to these assertions: generally, it is not possible to understand the true nature of the relationship between these two factors. Specifically, it may be unclear whether cash bonuses for safe driving are responsible for higher pay, or that offering better pay

[25] The Road Transport and Distribution and Long Distance Operations Road Safety Remuneration Order 2014 and the Contractor Driver Minimum Payments Road Safety Remuneration Order 2016.

at a company improves its ability to recruit and hire greater numbers of quality drivers. (FMCSA 2007, p. vi)

- The effects of increased remuneration on safety outcomes are inconclusive. The concern that financial pressures have implications for safety led to research comparing employee and owner–driver groups, because owner–drivers were thought to be under greater financial pressure than employee (or union) drivers. However, there was no conclusive evidence that owner–drivers are more accident prone, and at least three studies (Cantor et al. 2013; Dammen 2005; Williamson et al. 2009) found that they have fewer accidents than other driver groups. Indeed, owner-drivers are likely to have a greater incentive to maintain and care for their trucks as they bear the full cost of accidents and breakdowns (Cantor et al. 2013). One of the reviews of the RSR system found that:

  … while the research shows a link between low remuneration and unsafe on-road practices such as speeding and driving excessive hours, it does not appear that the detrimental effects noted in the research are being translated into poor road safety outcomes as there is no significant difference between the safety performance of owner drivers, small operators and employee drivers. (Jaguar Consulting 2014, p. 81)

The limitations of the literature were summarised in the regulation impact statement for the creation on the RSR system (box 8.9).

Given there is little evidence to suggest that regulatory intervention over remuneration in the road transport sector would improve road safety, regulated minimum rates would likely impose unjustified costs.

> Anything higher than a price floor, under which drivers can achieve cost recovery for inputs plus receive an income that meets living standards, may go above what is needed to reduce adverse economic incentives that spur unsafe behaviour and therefore place an unnecessary burden on industry. (PwC 2016, p. 53)

The costs of complying with the RSR system were also considerable — the most recent review of the RSR system estimated that the two orders imposed by the RSRT would have imposed costs in excess of $2 billion over the period 2012–27 (PwC 2016). An inquiry into the effect of the 2016 order (which mandated minimum payments for owner–drivers) is being conducted by the Australian Small Business and Family Enterprise Ombudsman (ASBFEO 2016), and will shed more light on the impact of the 2016 order.

Box 8.9 The regulatory process in practice: the Road Safety Remuneration System

The Road Safety Remuneration (RSR) system was established in response to a report published by the National Transport Commission in 2008. Known as the 'Safe Payments' report, it found there was a link between driver remuneration and safety outcomes, and recommended that the link be addressed through regulatory intervention (NTC 2008a). In response, the Australian Government established the RSR Tribunal under the *Road Safety Remuneration Act 2012* (Cwlth). The Tribunal commenced operation on 1 July 2012.

There were several flaws in the process of establishing the RSR system.

- There was no conclusive evidence of a link between remuneration and safety, making it unclear whether regulating remuneration was an effective way to improve safety outcomes.
  - The Safe Payments report acknowledged the lack of evidence that payments directly cause crashes, but urged that 'discussion should not be limited to a simple analysis of crash data', as economic pressures have implications for safety (NTC 2008a, p. 19).
  - The regulation impact statement for the creation of the RSR system found that data were limited and studies were inconclusive about the extent to which remuneration and safety are related:

    > There is some research to suggest that the remuneration for drivers is a factor in safety outcomes, however data at this point in time is limited and being definitive around the causal link between rates and safety is difficult. (PwC 2011, p. 3)

    The regulation impact statement for the RSR system found that it would lead to net economic costs but also noted that the assessment did not take into account the potential economic benefits of addressing any market failures (including low market power of drivers and barriers to exit from the industry). Although it recommended establishing the RSR Tribunal, it noted that further investigation was needed before determining safe rates.
- At the time of the creation of the RSR system, fatality rates involving heavy vehicles were improving. They had improved between 2002 and 2007 (the year that the Safe Payments report was produced), and continued to improve before the commencement of the RSR Act in 2012 (DITRD 2007, 2013). In this climate of improvement, there was no justification for such a strong regulatory response in the form of price regulation.

Given the Safe Payments report and regulation impact statement pointed to the inconclusive link between remuneration and safety, independent research to build an evidence base around this link should have been prioritised before establishing a specialised body.

Reviews of the RSR system were completed in 2014 (Jaguar Consulting 2014) and 2015 (PwC 2016) to assess the extent of regulatory burden on the road transport industry, and whether road safety outcomes can be more appropriately addressed through existing regulations. The reports were not publicly released until April 2016 (DoE 2016). Both reviews reiterated concerns about the lack of conclusive evidence around the links between remuneration and safety, that the RSR system leads to net economic costs, and overlapped significantly with existing driver safety regulations (such as those governed by the National Heavy Vehicle Regulator and state workplace safety regulations).

In addition, the RSR system created 'confusion and uncertainty' (PwC 2016, p. 21), particularly in relation to its interaction with other regulations in this area. For example, the Road Transport and Distribution and Long Distance Operations Road Safety Remuneration

Order 2014 (RSRT 2013b) — which required safe driving plans for managing fatigue and speeding — overlapped significantly with the HVNL and Western Australia's chain of responsibility regulations. Aspects of the RSR orders on pay, leave and protections against unfair conduct, also overlapped with Fair Work Commission responsibilities and other existing regulations (including the *Independent Contractors Act 2006* (Cwlth), the *Owner−Driver (Contracts and Disputes) Act 2007* (WA), and the *Owner Drivers and Forestry Contractors Act 2005* (Vic)). While some aspects of this overlap could have been avoided had the RSRT adequately considered existing regulatory systems when making orders, in practice this did not occur (PwC 2016).

The use of RSRT funding by the NHVR

When the RSRT was abolished, the Australian Government announced that its funding ($15.6 million over four years) would be transferred to the NHVR for implementing practical safety measures (Treasury 2016a).

The NHVR intends to use the additional funds for a range of safety initiatives, including integrating heavy vehicle monitoring sites into one national system, undertaking a heavy vehicle roadworthiness survey throughout Australia[26], developing industry codes of practice guidelines (which clarify how industries could prevent breaches of the HVNL) and providing education about chain of responsibility obligations (Chester 2016; NHVR 2016c). Other ways in which the NHVR could allocate this funding towards improving driver safety include:

- conducting an evidence-based evaluation of where state and territory regulation needs to be strengthened or streamlined to improve driver safety, including in Western Australia and Northern Territory to ensure all cross-border safety issues are addressed
- gathering available data (such as data from the Intelligent Access Program) to identify and target safety-improvement efforts at high-risk locations or behaviours
- accelerating development of an incident reporting database (which would enable analysis of the trends in heavy vehicle crashes) (NHVR 2015a).

It is essential that any additional expenditure by the NHVR results in clear and demonstrable benefits to heavy vehicle driver safety, or to broader community goals such as road safety or information to support efficient infrastructure investment.

It has been announced that the Productivity Commission will review the national transport regulation reforms, including the HVNL and NHVR, in 2016 (NTC nd; PC 2012c). Timely reviews of new regulatory systems are important, and areas for improvement in the national system — including identifying ways in which new funds allocated following the abolition of the RSRT could best be used by the NHVR to improve road safety in all states and territories — could be identified through that review. The review will also be an

[26] Including in Western Australia and Northern Territory which are not part of the HVNL.

opportunity to assess the funding requirements of the NHVR for road safety, particularly as it was not demonstrated at the time of abolishing the RSRT that the NHVR can effectively and efficiently use the funds for the purposes of road safety.

DRAFT FINDING 8.2

The road safety remuneration system (including the Road Safety Remuneration Tribunal) imposed costs on businesses, including farm businesses, without commensurate safety benefits and its abolition will reduce this burden.

DRAFT RECOMMENDATION 8.4

The Australian, state and territory governments should review the National Heavy Vehicle Regulator (NHVR) as part of the planned review of the national transport regulation reforms. The review should fully assess concerns over inefficiencies in heavy vehicle regulations, and identify ways in which new funds allocated following the abolition of the Road Safety Remuneration Tribunal could best be used by the NHVR to improve road safety in all states and territories.

8.2 Rail

Grains, sugar, fertilisers and other bulk products make up 8 per cent of the rail freight task in Australia (BITRE 2014). The grains industry is particularly reliant on rail transport, with most grain transported from grain producing regions to ports in the same state (Tulloh and Pearce 2011). About 5100 kilometres of operational railway were dedicated to grain haulage in 2013-14 (BITRE 2015c).

Rail can be an expensive mode of transport for farm goods — in some cases the rail freight cost component of exporting is greater than the cost of shipping from the port to the export destination (Australian Farm Institute 2011).

The Commission heard that there can also be considerable differences in rail freight costs in different jurisdictions. For example, CBH said that:

> In Victoria, the cost of below rail access of railing grain from Dimboola to port (300 km) is >$1.90 per tonne. In Western Australia, the below rail access cost of railing grain from Merredin to port (300km) is >$7.90/t. (sub. 36, p. 6)

In some cases, speed and weight restrictions have been imposed due to the poor condition of parts of network. Rationalisation of branch lines that are largely dedicated to grain is expected to continue (Nguyen et al. 2015). These factors, among others, have contributed to a switch from rail to road freight.

Price distortions between road and rail services

Privatisation of rail freight services has been a feature of reforms in the rail sector. However, price distortions between road and rail services remain. Most roads remain unpriced and this increases competitive pressure on rail freight.

Pricing distortions contribute to transport inefficiencies

Commercial rail network providers have difficulty recovering the costs of investments as the price they can charge is effectively capped by the cost of the road transport (which, as noted above, is not always priced on a cost-reflective basis) (Goesch et al. 2015; Harper et al. 2015). The lack of competitive neutrality between road and rail services has contributed to persistent underinvestment in rail infrastructure, leading to transport bottlenecks for some agricultural producers (although rail networks are also subsidised and the relative price distortion is unclear).

The move from rail to road transportation for many goods has also been influenced by a number of other factors, including technology and change in preferences. For example, just as canals and inland water transportation were displaced by the development of railways, larger and more efficient trucks have led to reduced use of rail lines (PC 2014c).

In some areas, the poor state of rail infrastructure increases both journey times and the overall cost of freight for agricultural producers, and can exacerbate pressure on road networks. For example:

- freight trains on the Mildura–Maryborough line are limited to a maximum speed of 80 kilometres per hour due to the poor condition of the rail line (MDC 2014)
- rail network issues have been identified as key impediments for moving wheat efficiently from farm to port, limiting the potential for wheat export growth (NFF 2013a). For example, a considerable portion of grain lines in New South Wales have speed limits of less than 30 kilometres an hour due to poor rail conditions (Nguyen et al. 2015)
- modelling by Nguyen et al. (2015) suggested that the closure of rail lines mainly dedicated to wheat in Western Australia would lead to a doubling of wheat freight volumes moved by road
- the volatility in export grain volumes, particularly as producers recover from drought conditions, affects the demand for rail transport and the ability of rail operators to service the grain rail network, in turn accelerating the switch to road freight (RFNRC 2007).

The switch from rail to road freight has implications for rural local governments which are responsible for most public roads (and which, as noted above, already have difficulty funding road maintenance).

Rail is also impractical for some products. The degree of substitutability between road and rail freight can be limited — by one estimate about 10–15 per cent of total freight task (PC 2006a) — and region or product dependent — about 60 per cent of agricultural road freighted containerised volume in northern New South Wales could be substituted (PwC 2015). As Voice of Horticulture said:

> The potential to increase the amount of product transported by rail from rural and regional Australia is very sector-specific. Rail works well in some circumstances, but it is impractical for other industries or businesses due to the length of time it takes, the cost of getting goods on and off trains, and the physical limitations of the nation's current rail infrastructure. (sub. 42, p. 16)

Improving price signals for the choice between rail and road

More efficient investment in rail and supporting infrastructure (such as loading facilities for larger dimension shipping containers and intermodal hubs) could be achieved through reduced pricing distortions in alternative modes of transport, particularly roads. While some infrastructure projects are likely to have benefits for producers — the planned Inland Rail is expected to attract 2 million tonnes of agricultural freight from roads, for example (DIRD 2015a) — cost-reflective road pricing would lead to more efficient infrastructure investments and more efficient distribution of goods moved by road and rail.

Importantly, this is not an argument for additional subsidies to rail. Rather, the Commission considers there would be benefit in ensuring that there is an efficient pricing system on roads (and rail) to reduce distortions and to encourage transport resources to flow to their most efficient use. The level and allocation of government investment in both road and rail infrastructure should be based on rigorous cost–benefit analysis.

Access to the grain rail network in Western Australia

The Australian and some state governments have established access regimes for infrastructure services such as railways. These regimes are designed to address the market failure that can arise if there is an enduring lack of effective competition, due to natural monopoly, in markets for infrastructure services such as rail. Large, usually sunk, fixed costs and economies of scale typically associated with natural monopoly can serve as impediments to prospective competitors entering rail (and other) infrastructure service markets.

In this inquiry, CBH — the largest grain exporter in Western Australia — expressed concern that it is no longer able to access parts of the grain rail network.

> Brookfield Rail has closed those sections of the [Western Australian Grain Freight Rail Network] on which it is not making very high levels of profit, without surrendering them to an alternate user, on the basis that it can continue to increase revenue and margins from a reduced section of the rail network without increasing its own productivity. (sub. 36, p. 6)

CBH also pointed to delays of many months — and even years — in negotiating access through the state's Railways (Access) Code 2000 (the Code):

> The process of obtaining access under the Code has had a significant negative effect on the efficiency of CBH's operations, and has resulted in uncertainty and increased costs for CBH and its grain grower members. (sub. 36, p. 6)

The regulation of Western Australia's grain freight rail network was recently reviewed in detail, by both the Economic Regulation Authority of Western Australia (WAERA 2015) and the Economics and Industry Committee of the Western Australian Legislative Assembly (WALAEISC 2014). The Western Australian Government also indicated that it is considering whether to conduct a 'broad policy review' of its rail access regime (sub. 54, p. 28), which would cover the grain rail networks used by CBH, to determine if the regime is beneficial and cost effective. The Commission considers that inefficiencies in that state's rail access regime could be identified and addressed through such a review.

8.3 Ports

Access to ports is crucial for agricultural producers as almost all agricultural exports are transported by sea. Improved access to port facilities can promote competition in stevedoring services and shipping, and improve the efficiency with which agricultural goods can be moved domestically and internationally.

Ports are often characterised by high fixed costs and economies of scale, providing port operators with potential market power in some cases. In recent years most major ports in Australia have undergone privatisation and port authorities act as landlords for competing service providers (Harper et al. 2015).

The deregulation of the 'single desk' marketing of bulk wheat exports has also left grain exporters with ownership of grain port terminals in a dominant position over the supply chain. Regulatory regimes that can efficiently and effectively constrain the monopoly power of port owners and port service providers are therefore important for all port users, including farm businesses.

Concerns about access to port services

Insufficient port capacity, or limitations on access to ports, pose a significant logistical risk to agricultural industries that need to compete with other sectors for port access. Port capacity constraints are an issue for livestock exporters in the west and north of Australia, where there is strong competition from the resources sector for port capacity. According to the Australian Livestock Exporters' Council (ALEC 2014), live exporters have access to only one berth at Fremantle and Darwin, as capacity at those ports has been crowded out by the resources sector. Cattle producers in the Kimberley region face similar competition from the resources sector at ports at Port Hedland, Broome and Wyndham (Sd+D 2008).

The NSW Farmers' Association also expressed concern that an absence of competition at grain port terminals puts farm businesses at a disadvantage:

> … investment in port capacity has increased the marginal cost of the supply chain across the whole export task for a port zone. Under these conditions the increased marginal costs are passed back to the farm gate creating economic inefficiency … The ability of port terminal service providers to pass back these inefficient costs to farmers creates an appropriation of rents from the farm gate, in turn impacting the international competitiveness of Australian Agriculture. (sub. 72, pp. 35–6)

In this context, the NSW Farmers' Association (sub. 72) considered that the exemptions from the Port Terminal Access (Bulk Wheat) Code of Conduct granted to grain port facilities in New South Wales were premature. Notwithstanding these concerns, the Commission believes there are procompetitive developments that would, in time, ameliorate such concerns (box 8.10).

Port privatisation is in the public interest under certain conditions

Concerns about access to port services have been raised in the context of port privatisation as, in an attempt to maximise sale revenue, governments have not always put mechanisms in place to constrain ports operators' monopoly power.

- Restrictions on the development of a second port in the Melbourne region were considered by the Victorian Government during the privatisation of the Port of Melbourne (ACCC 2014b). Such restrictions would have particular implications for the dairy industry in both Victoria and Tasmania, given the high proportion of dairy exports through the Port of Melbourne (PC 2014a). While the rights to a second container port were ultimately not included for the Port of Melbourne lease, the legislation allows for compensation if a second port is developed within the 15 years from the lease's commencement (VDTF 2016).
- The Chairman of the Australian Competition and Consumer Commission, Rod Sims, has expressed concern that the privatisation of the Port of Fremantle might confer rights to develop a new port in the region to the new owners, as occurred in relation to Sydney Airport over ten years ago (Sims 2016). An arrangement of this type would curtail the potential for Fremantle to be serviced by two competing ports, to the detriment of port users.

Box 8.10 **Wheat Port Code of Conduct**

Port terminals for wheat exports have been subject to access regimes since the 'single desk' operated by the Australian Wheat Board was deregulated in 2008. An industry-specific access test, under the *Wheat Export Marketing Act 2008* (Cwlth), was put in place to prevent incumbent bulk handling companies that have port terminals from excluding new exporters. The Commission's inquiry into wheat export marketing arrangements recommended that the access test requirement end on 30 September 2014 (PC 2010c). The Commission envisaged that regulated access to grain port terminals would then rely on general competition law (Part IIIA of the *Competition and Consumer Act 2010* (Cwlth)), with continuation of mandatory disclosure and supplemented by a voluntary code of conduct for port terminal services operators.

Concerns that continued regulatory oversight was required to contain monopolistic behaviours in some grain export supply chains led the Australian Government to introduce a mandatory code of conduct in September 2014 — the Port Terminal Access (Bulk Wheat) Code of Conduct (the Wheat Port Code of Conduct). The Australian Competition and Consumer Commission (ACCC) enforces the Wheat Port Code of Conduct, under which all port terminal operators are obliged to negotiate with wheat exporters for access to port terminal services. The ACCC also has the role of approving port terminal service provider capacity allocation system, or exempting port terminal service providers (having regard to a number of matters set out in the Code (ACCC 2014f)). The Wheat Port Code of Conduct allows the Minister for Agriculture and Water Resources to exempt cooperatives from port access provisions if the Minister determines the growers' interests are sufficiently represented and that growers have influence over management decisions.

In November 2014, an exemption was granted to all four of CBH Group's ports in Western Australia. According to CBH, the exemption has facilitated agreements with major exporters that would not have occurred without the exemption, which in turn benefits its grower members.

> Since the exemption has been in place, CBH has been able to sign up long term agreements with its grain exporting customers [10 million tonnes with 10 marketers] providing these organisations with a level of service and flexibility that was not possible under the rigid regulatory arrangements previously in place. (sub. 36, p. 9)

As CBH is a grower-owned cooperative but is also a major bulk handler in Western Australia, some stakeholders are concerned that the exemption disadvantages grain growers and enhances CBH's monopoly over grain ports in Western Australia (SRRATRC 2015b). However, other stakeholders believe that where growers have direct influence over the provision of port terminal services — as CBH does — 'regulation would impose costs that would not exceed the expected benefits' (DoA 2014e, p. 33).

The Wheat Port Code of Conduct will be reviewed by the end of 2017 to assess whether there is justification for it to continue, taking into account the level of competition in the supply chain. There have been a number of procompetitive developments along the grain export supply chain recently that reduce concerns over the potential abuse of monopoly power, including new entrants at Port Kembla in New South Wales (Quattro Ports) and Bunbury in Western Australia (Bunge) (ACCC 2015b, 2015d; PC 2014e). Growing investment in on–farm storage capacity would also introduce competition in the upstream market (Rabobank 2016). The Inland Rail project is also expected to enhance competition on the east coast by increasing grain access to all eastern export grain terminals between Brisbane and Geelong (DIRD 2015a). The Commission maintains its view from the inquiry into wheat export marketing arrangements that the industry should ultimately transition to rely on Part IIIA of the Competition and Consumer Act (PC 2010c).

Restrictions on competition should be avoided in the process of selling or consolidating public port assets. As the Commission noted in its inquiry into public infrastructure (PC 2014c), privatisation of public enterprises has the potential to increase economic efficiency and be in the public interest where:

- user charges make commercial operation feasible
- private ownership can be made compatible with legitimate public policy objectives, through structural separation, regulation, sale conditions and government payment for appropriately valued community service obligations
- sale proceeds exceed the value of the assets under continued government ownership.

With these conditions addressed, privatisation of a port is likely to improve commercially relevant decision making and support major export commodities, including agricultural commodities. Restrictions on competition during privatisation of port assets may achieve a higher sale price but this is not in the community's interests if it comes at the expense of a less competitive market structure. As the Competition Policy Review noted:

> Maximising asset sale prices through restricting competition or allowing unregulated monopoly pricing post sale amounts to an inefficient, long-term tax on infrastructure users and consumers. (Harper et al. 2015, p. 196)

DRAFT FINDING 8. 3

Privatisation of major ports has the potential to increase economic efficiency, provided appropriate processes are followed to ensure that the public interest is protected through structural separation, regulation or sale conditions. Increasing the sale price of ports by conferring monopoly rights on buyers is not in the public interest.

8.4 Coastal shipping

In 2013-14, coastal shipping (broadly defined as the carriage of cargo between ports in Australia) was used to move two million tonnes of food and live animals through Australian ports (BITRE 2015a). Coastal shipping is also important in the movement of farm inputs such as fertiliser (QTHLGC 2014). The National Farmers' Federation highlighted the importance of shipping to the agricultural sector.

> For many farmers, shipping is an essential link in the supply chain. Australian products must be able to move quickly from the farm gate into domestic and overseas markets at a price that delivers a return to the farmer. (sub. 61, p. 20)

The Australian Government regulates coastal trading under the *Coastal Trading (Revitalising Australian Shipping) Act 2012* (Cwlth) (Coastal Trading Act). For the 100 years prior to the Coastal Trading Act, the Australian Government regulated coastal shipping through various iterations of the *Navigation Act 1912* (Cwlth). On introducing the

bill for the new Coastal Trading Act to replace Part VI of the Navigation Act (thereby creating a new licensing regime for coastal trading), Minister Albanese said that the reforms were to encourage the 'revitalisation of the Australian shipping industry' (Albanese 2012, p. 4), which effectively meant protecting the Australian shipping industry from foreign competition.

The regulation of coastal trading includes limitations on trade by foreign-flagged vessels within Australian coastal waters (known as cabotage restrictions). All domestic maritime movements of cargo on interstate voyages must be authorised by a licence, and foreign vessels are treated differentially through the licencing system.

The licences are:

- *general licences* — these are available to Australian-flagged vessels (that is, vessels registered on the Australian General Shipping Register) and provide unrestricted access to Australian waters for five years. Each seafarer on the vessel must be an Australian citizen, permanent resident or hold a visa with appropriate work rights
- *temporary licences* — these are granted to foreign-flagged vessels or vessels registered in the Australian International Shipping Register, and allow a vessel to be used in coastal trading over a 12-month period. Temporary licence holders must undertake at least five voyages during the licence period, and must specify the details of each voyage when applying for the temporary licence. Information about each application is provided to holders of general licences, who have the opportunity to provide notice that a general-licensed vessel is available to conduct any of the voyages. This triggers a mandatory negotiation process between the applicant and the general licence holder. The Minister must take the outcomes of the negotiation into account when deciding whether or not to grant the temporary licence
- *emergency licences* — these can be granted in response to specified national emergencies that require a significant and coordinated response.

Regulatory changes in 2009 also extended the application of the *Fair Work Act 2009* (Cwlth) to workers on foreign-flagged vessels operating in Australian waters.

While the regulation impact statement (RIS) for the Coastal Trading Act found that its introduction would have a net benefit (DIT 2011), this conclusion was based on the assumption that a productivity compact between the Australian shipping industry and maritime unions would lead to substantial savings, which would offset the costs associated with the changes in shipping licensing. That is, 'the RIS analysis identifies the compact as a major component of the productivity benefits of the reform' (SELC 2012, p. 75). However, as the compact was not in place when the RIS was prepared, the basis for this conclusion is not clear (PC 2014g). Assumptions made about the compact and the extent to which it delivered productivity improvements may not have eventuated (DIRD 2014).

The Commission's inquiry into Tasmanian shipping and freight (2014g) recommended that the Australian Government review coastal shipping regulations (including cabotage) as a matter of priority, partly due to concerns about apparent flaws in the findings of the RIS.

Coastal shipping regulations harm farm business competitiveness

The cabotage restrictions protect Australian-flagged ships by shielding them from competition by foreign vessels. Foreign vessels are subject to a range of restrictions — including the requirement to undertake at least five voyages over a 12 month period and to specify the details of each voyage in advance, as well as the risk that general licence holders may seek to undertake those planned voyages. The combined effect of these requirements is that Australian vessels receive preferential treatment in coastal trading.

Cabotage restrictions are a significant impost for Australian businesses that rely on coastal shipping, and they deter businesses from using coastal shipping (Harper et al. 2015; PC 2014g; Harper et al. 2015; PC 2014c).

While the volume of domestic freight has grown steadily over the past 40 years, coastal shipping volumes have remained largely static. According to the National Commission of Audit, this is partly because the regulatory settings have increased shipping costs (NCA 2014).

High shipping costs have seen some businesses move operations offshore (SRRATLC 2015b) or shift to land freight (Shipping Australia 2015; Sheepmeat Council of Australia and Cattle Council of Australia, sub. 88, att. 1).

The National Farmers' Federation explained how these arrangements increase costs and uncertainty:

> … a temporary license applicant and its customers have no right to choose who they contract with to deliver the freight services they require. A third party can take over their contracted voyage, without any obligation to meet the agreed terms. For example, initial contracting parties might agree on a price of $20 per tonne. A third party then nominates to undertake the voyage, ships the contracted goods at a price of $25 per tonne, and leaves the initial parties to work out the difference. (2015a, p. 8)

The Business Council of Australia gave numerous examples of increased shipping costs following the introduction of the Coastal Trading Act.

> Tonnage rates for Australian ships, where there is the right to contest, can be up to double the rates offered by foreign ships for effectively the same service. This can add tens of millions of dollars to the cost base of businesses that use coastal shipping … One company saw freight charges increase by between $3,000 to $3,500 a day up and down the east coast of Australia … When challenged by a General Licence holder, one company seeking a temporary licence was faced with a 100 per cent freight cost increase. (BCA 2014, pp. 9–10)

Cabotage restrictions also disproportionately affect Tasmanian businesses which are heavily reliant on coastal shipping to deliver produce to the market (box 8.11).

Box 8.11 Disproportionate impact of coastal shipping regulations on Tasmanian businesses

Cabotage regulations have a disproportionate impact on Tasmania, as over 99 per cent of freight volume moves in and out of Tasmania by sea (PC 2014g). Since 1976, the Australian Government has provided a subsidy to Tasmania under the Tasmanian Freight Equalisation Scheme, due to the perceived cost disadvantage of Bass Strait transit. Increased shipping costs due to cabotage restrictions raise Tasmanian producers' dependence on the subsidy to be competitive.

The Tasmanian Farmers and Graziers Association claimed that, as a result of the coastal shipping regulations, the route across Bass Strait is the most expensive sea transport route in the world (TFGA 2014). And according to the National Farmers' Federation, shipping from Tasmania to Melbourne can cost the same as subsequent freight legs overseas (NFF 2015a). Voice of Horticulture said that it can cost more to ship fruit to the mainland than to China:

> … as a result of the restrictive Australian cabotage regime, the cost to ship fruit from Tasmania to Brisbane is approximately $7.00 [Australian dollars] per 18 kg box compared with $5.60 [Australian dollars] per 18 kg box shipped to Shanghai, via Melbourne. (sub. 42, p. 19)

The necessary journey across Bass Strait makes processing in Tasmania relatively less competitive than on the mainland.

> The costs of transporting livestock from locations such as King Island and Finders Island to Tasmania for process is expensive and in a cost per kilometre considerably greater than on mainland Australia. The challenges and costs around positioning empty containers in Tasmania and transporting finished product by road and vessel to the mainland for transhipment, is also very expensive in comparison to mainland costs. (JBS Australia 2013, p. 2)

Recent attempts to improve the competitiveness of coastal shipping

In April 2014 — a month after the release of the Commission's inquiry into Tasmanian shipping and freight (PC 2014g) — the Australian Government released an options paper on reforms to the Coastal Trading Act (Truss 2014). In June 2015, the Australian Government proposed amendments to coastal shipping laws under the (now lapsed) Shipping Legislation Amendment Bill 2015 (the Shipping Amendment Bill). Proposed changes included:

- the introduction of a single permit system allowing unrestricted trade for both Australian and foreign vessels
- removing the contestability provision (which would be redundant given that foreign and Australian registered vessels would be subject to the same access and operation conditions)

- excluding ships engaged predominantly in international trading (that is, foreign vessels operating in coastal waters for less than 183 days per year) from:
  - the application of the Fair Work Act (the parity condition)
  - the requirement to hire two Australian senior crew members.

The Shipping Amendment Bill was referred to the Senate Rural and Regional Affairs and Transport Legislation Committee, which pointed to the estimated benefit from the proposed amendments of over $667 million over 20 years (SRRATLC 2015b). These benefits would arise through increased competition from foreign vessels.

> The existing legislation — the Coastal Trading Act — is clearly inadequate. It has failed to revitalise coastal shipping … There are now fewer Australian flagged vessels, there is less reason to use them, and there are more and more impediments which prevent shippers making efficient and rational transport choices … Failing to pass the bill will not change the course of Australia's coastal shipping industry. It's slow decline is likely to continue … On the other hand, passing the bill is likely to enable Australian producers to access cheaper, more flexible and more responsive options for transport. (SRRATLC 2015b, pp. 30–31)

However, Parliament did not pass the bill due to concerns over the potential loss of Australian jobs (Albanese 2016). Such concerns are unjustified — the restrictions protect some jobs at the expense of job growth in other industries (PC 2014g). Protecting an industry from competition not only harms consumers (in this case farmers), but also reduces the incentives of the protected industry to improve its efficiency and competitiveness. Over time, the protected industry falls further behind foreign competitors, requiring ever more protection and increasing the cost to consumers and the community in general.

Reforming coastal shipping regulations

As outlined in the Commission's inquiry into Tasmanian shipping and freight, on balance, coastal shipping regulations tend to:

- increase the costs of providing domestic coastal trading services
- deter non-Australian vessels from engaging in Australia's coastal trade and direct international services that rely on coastal trade volumes for commercial viability
- reduce the level of competition in Australia's coastal trading network and reduce the incentives for efficiency improvements by Australian ships.

The high cost of coastal shipping imposes an additional, significant, burden on farm businesses dependent on coastal freight, with particular effect on Tasmanian producers. It also deters farm businesses and related processing and supplier industries from using sea freight instead of road.

Rather than revitalising the Australian shipping industry, the requirements of the Coastal Trading Act 'impose additional regulatory burdens on businesses that use shipping without

any clear benefits for Australian licenced shipping' (DIRD 2015b, p. 9). In the first two years of operation of the Coastal Trading Act there was a 63 per cent decline in the carrying capacity of the major registered Australian vessels, relative to levels seen in 2011-12 (DIRD 2015b). Farm businesses have had few options but to switch to alternative, less efficient, ways of moving their goods as a result of the rising coastal shipping costs, which contributes to further decline in demand for Australian shipping services.

Reforms to coastal shipping regulations to increase competition will likely lead to long-term economic benefits by reducing the cost of shipping and incentivising Australian ships to be more competitive. Reforms such as those proposed in the (now lapsed) Shipping Amendment Bill would lower market entry requirements and induce greater competition in the coastal shipping industry.

Reforms to allow greater competition from foreign vessels in coastal waters would allow Australian businesses (including agricultural businesses) to access more cost effective shipping services. Increased competition in coastal shipping would be particularly beneficial for Tasmanian producers, and could reduce the extent to which producers rely on the Tasmanian Freight Equalisation Scheme to be competitive.

DRAFT RECOMMENDATION 8.5

The Australian Government should amend coastal shipping laws by 2018 to substantially reduce barriers to entry for foreign vessels, in order to improve competition in coastal shipping services.

8.5 Biofuel support programs

Biofuels are liquid fuels made from organic material, such as plants and animal material. Both Queensland and New South Wales currently have (or have passed laws to implement) biofuel mandates.

Queensland's *Liquid Fuel Supply Act 1984* requires that, from 1 January 2017, a minimum of 3 per cent of non-premium petrol sales be ethanol (ethanol is a renewable, clear and colourless liquid that mixes with petrol). For example, at least one in three litres of non-premium petrol sold at stations stocking E10 must be an E10 product (QDEWS 2016). The Queensland Department of Energy and Water Supply states that:

> A biofuel mandate is a step towards growing our biofuel and bio-manufacturing industries. It will provide certainty so the industry can invest, innovate and create jobs as part of a cleaner, greener future for Queensland. A flourishing biofuels industry will also create the foundation for a new high-value bio-manufacturing industry. (QDEWS 2016)

In New South Wales, under the *Biofuels Act 2007* (NSW) there is an ethanol target of 6 per cent of total fuel sale volumes.

Both states also have biodiesel targets — in New South Wales the target is 2 per cent of all diesel sold and in Queensland it is 0.5 per cent of all diesel sold.

Also, until recently the Australian Government operated an Ethanol Production Grants (EPG) program. In place from 2002 to 30 June 2015, the EPG program effectively removed excise rates for domestic ethanol (imported ethanol remained subject to full excise). Since the EPG program rebate ceased, the full excise rate applicable to ethanol was reduced to zero for domestic production for 2015-16, after which the excise rate will increase annually by 6.6 per cent until it reaches 32.8 per cent (ATO 2016c; Treasury 2014a). Imported ethanol continues to be subject to the full excise — currently 39.5 cents per litre (ATO 2016b). In effect, local ethanol production continues to be protected by arrangements equivalent to a tariff.

While participants did not raise concerns about biofuel support programs, the Australian Forest Products Association (sub. 11) and Canegrowers (sub. 22) advocated for greater support for the use of agricultural and forest residues for bio-energy production, including biofuels.

Biofuel support can increase fuel costs and may not help the environment

Assessments of the New South Wales biofuel mandate showed that:

- retailers cut the supply of regular unleaded petrol to meet the biofuel sales target
- the mandate reduced consumer choice and increased the price consumers paid for petrol because they substituted to premium fuels (ACCC 2013b; IPART 2015).

The extent to which farm businesses are affected by biofuel mandates depends on whether they are able (and willing) to switch to biofuel blends. Quality control issues for biodiesel have led to some apprehension over its use in heavy vehicles (AIP 2015), which means that some farm businesses might avoid blended products.

About 84 per cent of fuel consumption in agriculture is diesel and 14 per cent is petrol (ABS 2004), so the impact of biofuel mandates on farms would likely be felt through the biodiesel target. The highest biodiesel target in Australia is 2 per cent (New South Wales) but it has not yet been achieved (see below), so the price impact of biodiesel mandates on consumers is uncertain.

Environmental benefits from ethanol support programs in Australia have been modest. Only about 1 per cent of all road transport fuel volume in Australia is ethanol, which means only a small displacement of fossil fuels was achieved. The cost of abatement through the EPG program is relatively high — estimated to be between $274 and $496 per tonne of carbon emissions abated (BREE 2014; PC 2011b).

Also, the extent to which biofuels offer carbon emissions savings depends on how they are produced. If native vegetation is cleared in order for the land to be used in biofuel production, this can lead to several times more carbon emissions being released than the fossil fuels they displace (Fargione et al. 2008). Import tariffs for ethanol also prevent the use of more ethanol imports, thus reducing the carbon abatement benefits which could have be gained by using imports that have much lower greenhouse gas emissions (such as Brazilian ethanol) (de Gorter, Just and Tan 2009).

Biofuel mandates have limited benefits for farmers

As the Queensland Department of Energy and Water Supply noted, the biofuel mandate aims to provide an alternative market for primary producers (QDEWS 2015). However, some stakeholders are concerned that demand from these alternative markets could result in additional competition for feedstock. Australian Pork Limited, for example, raised concerns about the impact of ethanol mandates on pig producers, particularly during dry periods when feed grains can represent up to 80 per cent of cost of pig production (APL 2015).

There are two main factors that limit the influence of domestic biofuel mandates on crop prices: ethanol is produced mostly from by-products that do not compete with the food stream; and Australian farmers are price takers in world markets.

- The feedstock used in Australia is predominantly composed of byproducts — starch (Manildra Ethanol Plant) and molasses (Sarina Distillery) — which have a limited impact on other markets. One plant (Dalby Bio-Refinery) uses sorghum as its feedstock and represents 18 per cent of industry production capacity (BREE 2014). Feedstock is the largest cost component in ethanol production, and an expanded domestic ethanol industry using market-priced crops as feedstock is unlikely to be economically viable in the absence of the EPG program rebate (whereas producers using waste residues face zero or low costs) (BREE 2014).
- Australian farmers are price takers in global markets, which means it is unlikely that domestic biofuel mandates will directly influence crop prices received by farmers. While sorghum producers in Australia have benefited through global grain prices that were driven up by overseas ethanol policies (Wylie 2008), in the long run government ethanol support policies (both in Australia and overseas) have the potential to raise the cost of feed grain prices and negatively impact livestock industries (PC 2008c).

In addition, biofuel support programs have had limited effects on stimulating domestic production capacity, which limits the market for producers to sell feedstock. In spite of the EPG program, there is only one producer in New South Wales (Manildra Group, which owns the Manildra Ethanol Plant and received over 70 per cent of all EPG program funding) and two producers in Queensland (ANAO 2015; BREE 2014). The New South Wales ethanol target has never been achieved, and the scheduled increase in the biodiesel target was suspended due to insufficient local production capacity (ACCC 2013b;

Hartcher 2011). Mobil (2015) also claimed that there is insufficient local biodiesel production to achieve the Queensland target. The market for selling biofuel feedstock is therefore likely to remain limited and concentrated.

DRAFT RECOMMENDATION 8.6

Arrangements to support the biofuel industry — including excise arrangements and ethanol mandates — deliver negligible environmental benefits and impose unnecessary costs on farmers and the community. The Australian, New South Wales and Queensland Governments should remove these arrangements by the end of 2018.

9 Food regulation

Key points

- Governments in Australia regulate food to support public health and safety and consumer decisions about buying food products.
- Food labels are used to convey information to consumers, such as information about ingredients, nutritional value, production processes and country of origin.
- Misleading or confusing labelling can result in consumers making choices that do not reflect their preferences. This could occur, for example, where standards and definitions do not accord with consumers' expectations.
  - The current country-of-origin labelling arrangements have confused consumers and limited the ability of Australian producers to differentiate their products. Recent changes are expected to provide consumers with country-of-origin claims that are easier to understand, and provide greater clarity to producers about what is expected. However, more evidence is needed to determine if a mandatory system delivers greater net benefits than a voluntary system.
  - A national standard for 'free-range' egg labelling was recently announced to help ensure that free-range eggs are produced according to consumers' expectations. However, there is uncertainty about what level of welfare accords with consumers' expectations. The standards may need to be revised following the development of national standards and guidelines for poultry welfare in 2017.
- The case for mandatory labelling of genetically modified (GM) foods is weak. Given that Food Standards Australia New Zealand assesses GM foods for their health and safety, GM labelling is a consumer value rather than a food safety issue. Where consumers prefer to purchase non-GM foods, the market is able to provide information through voluntary labelling.
- Advances in technology that enable gluten to be detected to minute levels have made it harder for producers to make a 'gluten-free' claim. While Australia's standard for gluten-free labelling aims to protect gluten-intolerant consumers from food safety risks, there is a risk of lost market opportunities for Australian producers. The current Australian standard is also more stringent than international standards.
- Traceability of eggs is necessary to address outbreaks of food-borne illnesses. However, it is not clear that egg stamping is the most efficient and effective policy tool.

In Australia, there are food regulations at every stage of the production process. Food regulations seek to support public health and safety, provide clear and accurate information about food products, and protect the international reputation of Australia's food. They also allow Australian food to be distinguished in international food markets.

Commenting on the benefits of food regulations, the Department of Foreign Affairs and Trade said that:

> Australia's stringent regulations on food safety … increase the level of confidence that foreign governments and consumers have in the quality and safety of Australian products. These regulations improve returns and reduce risks for a range of food producers, manufacturers and brand owners. They assist exports, as evidenced by the success of an increasing number of Australian food brands across the immediate region. (sub. 56, pp. 2–3)

However, regulations that impose excessive compliance burdens on food producers, which includes farmers, can have unintended consequences such as higher food prices and less consumer choice.

While many inquiry participants recognised the benefits of food regulations, concerns were raised about regulations relating to:

- labelling requirements
- egg stamping
- food safety audits.

This chapter looks at the rationale for food regulation (section 9.1) and the food regulation system in Australia (section 9.2), and examines concerns raised about regulation of food labelling (section 9.3) and regulation of food safety in the production process (section 9.4).

9.1 Rationale for food regulation

When consumers purchase food, they do so based on a variety of attributes such as taste, nutritional value, food safety and country of origin. Consumers weigh up the costs and benefits of various food attributes, and, based on these, decide the price they are willing to pay for a given food product. Producers, by differentiating products based on quality and other attributes, can often receive a premium price. Consumers' purchasing decisions in turn send signals to retailers, wholesalers and farmers about what to supply.

For consumers' purchasing decisions to accurately reflect their preferences, they need access to clear and relevant information about food products. However, asymmetric information between consumers and producers can be a feature of some food markets, and this can mean that markets do not work as well as they might (chapter 11). In these cases, there may be a case for government involvement through, for example, mandating that certain information be provided or setting minimum standards.

That said, recent developments in technology are providing opportunities for consumers to obtain more detailed information about their food choices and to compare prices between different sellers.

In rare cases, governments prohibit certain foodstuffs in order to safeguard human health or other community interests. For example, is it illegal to sell raw milk for human consumption in Victoria (DFSV 2015). The Australian Industrial Hemp Alliance pointed out that 'Australia is one of the few countries in the world to ban the human consumption of hemp food products' (sub. 69, p. 3).

Regulation of food labelling

Food labels can help consumers select the foods that best satisfy their preferences. Labels provide information about, among other things, food safety (allergen information, use-by dates), health (nutrition information) and consumer values (such as free-range, organic and country of origin).

Producers (including primary producers, processors and marketers) have an incentive to label their products with attributes that are favoured by consumers, such as 'fat-free', 'free-range' or 'made in Australia'. They may also choose to participate in third-party schemes, such as the Heart Foundation Tick, and kosher or halal certification. Producers who successfully communicate to consumers that their products have desirable qualities may be able to increase the volume of sales, charge a premium for their products or enhance their reputation.

However, consumers cannot always verify if producers' claims are accurate. As Rod Sims, Chairman of the Australian Competition and Consumer Commission (ACCC), said:

> Consumers are increasingly placing weight on premium claims and are likely to value the types of claims that directly affect the integrity of the product, such as where something was made, grown or produced and how it was made, grown or produced. These are claims made by producers that a consumer cannot test or validate; for example, a claim such as 'free to roam'. These claims, if made improperly, have an impact on consumers, and equally important can give suppliers an unfair competitive advantage. (2013)

Therefore, many countries have consumer protection measures to ensure that the information provided to consumers is accurate and reliable. In Australia, there is a requirement under the Australian Consumer Law (ACL) that food labels are not false or misleading. Governments can also define certain phrases, set labelling standards and/or provide consumer information. Governments should choose the policy tool that yields the greatest net benefit to the Australian community (Australian Government 2014c).

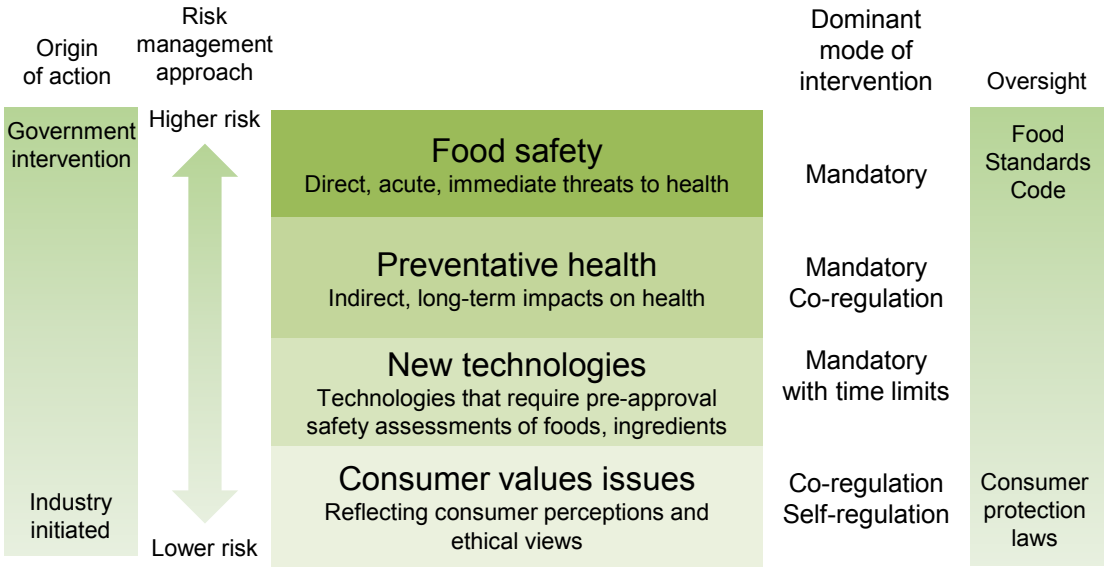
The food labelling hierarchy

The Blewett review (Blewett et al. 2011) conceptualised the need for government action relating to food labelling using a food labelling hierarchy (figure 9.1). The hierarchy provides a conceptual framework to assess the role of government in regulating food labelling, and outlines the different purposes of labels and the risks that labels can be used

to address. In general, the higher the risk, the greater the justification for government intervention (subject to a net benefit test).

- Food safety is at the top of the labelling hierarchy and is designed to protect consumers from direct and immediate threats to their health — mandatory requirements to provide information are often considered most effective in managing this risk.
- Preventative health focuses on longer-term risks, with government action aimed at allowing individuals and populations to make healthier food choices — both mandatory requirements and co-regulation are considered to be effective for this purpose.
- Foods produced using new technologies could be labelled where there is a lack of experience with the use of the technology — the review panel considered that in these situations, time limits on regulations would allow them to be reviewed in light of experience.
- For consumer values issues which present minimal or no risk to human health, the panel suggested that 'more flexible, participatory and devolved forms of intervention should apply' (Blewett et al. 2011, pp. 43–44).

Figure 9.1 **The food labelling hierarchy**



Source: Blewett et al (2011).

Regulation of the food production process

Consumers generally do not directly observe how their food is produced, resulting in information asymmetries between producers and consumers about production processes. However, the market may still achieve an efficient level of food safety (that is, the level of food safety that consumers want and are willing to pay for) because a reputation

mechanism. A reputation mechanism can be effective because of repeat customers or through word of mouth (increasingly via social media), and can create strong incentives for sellers to supply safe food (Rama and Harvey 2009).

However, reputation may be insufficient to ensure efficient levels of food safety if the source of foodborne illnesses cannot be easily identified or if producers do not have sufficient knowledge about food safety risks. In such cases, government regulation may be necessary to ensure minimum food safety practices (including traceability) during the production process.

The role of technology

Technology can reduce the costs of information exchange and help overcome information asymmetries between producers and consumers. For example, Choice (2016a) recently released a mobile phone application called 'CluckAR', which allows consumers to learn about the hen stocking densities of different brands of eggs by pointing their mobile phone camera at egg cartons. Some free-range egg producers, such as Ecoeggs (2014), have also chosen to broadcast footage of their hens ranging outdoors. This allows consumers to observe a part of the production process to determine if 'free-range' claims meet their expectations. Greater adoption of such technology may reduce the need for government involvement in setting regulatory standards.

However, regulation may still need to ensure that the information provided via technology is not misleading or deceptive. Free Range Eggs Farms, which supplies eggs labelled as 'free-range' under the brands Ecoeggs, Port Stephens and Field Fresh, was recently fined for misleading and deceptive 'free-range' claims on websites, Facebook and Twitter (ACCC 2016c).

9.2 Food regulation in Australia

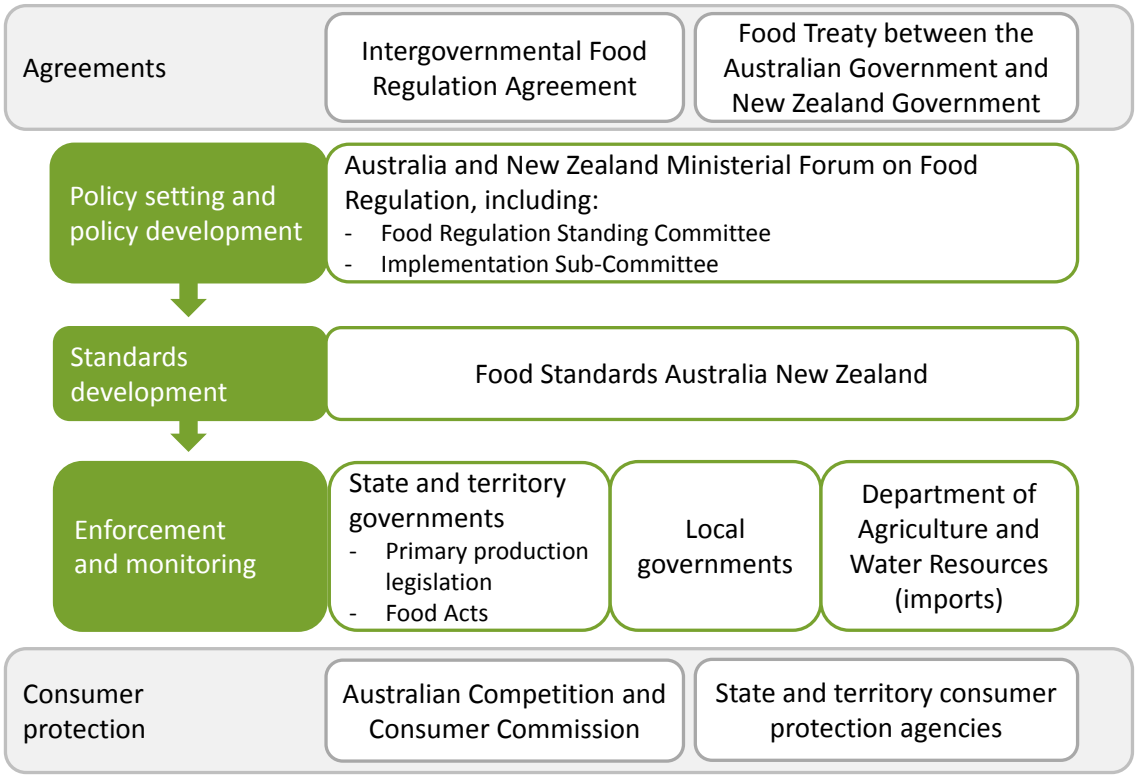
The food regulation system is a co-operative international arrangement between New Zealand, Australia and the states and territories. All three levels of government in Australia are involved in food regulation. Figure 9.2 shows the food regulation system in Australia.

The food regulation system is established through:

- an intergovernmental agreement between the Australian and state and territory governements (the Food Regulation Agreement). This agreement gives effect to the commitment by all Australian governments to a national approach to food regulation, and establishes the Australia and New Zealand Ministerial Forum on Food Regulation (FoFR) (DoH 2014)
- a treaty between Australia and New Zealand, which establishes a system for the development of joint food standards. The treaty aims to harmonise food standards,

reduce unnecessary barriers to trade, and reduce compliance costs for industry (DoH 2014; FSANZ 2015a).

Figure 9.2 **Food regulation in Australia**



Food Standards Australia New Zealand (FSANZ), an independent statutory agency, uses scientific and technical criteria to establish food standards, which form the Food Standards Code (box 9.1). Requirements in the Code relate to food safety, food labelling, food additives and novel foods, among other things. FSANZ is part of the Australian Government's health portfolio. When setting standards, FSANZ must have regard to the policies and guidelines set by the FoFR.

Anyone can make an application to FSANZ to change the Food Standards Code (FSANZ 2015b). Making an application involves submitting information to FSANZ regarding the purpose of the application and its costs and benefits, as well as providing supporting information or data that demonstrate how the changes would enable the achievement of FSANZ's objectives (these requirements are outlined in the *Food Standards Australia New Zealand Act 1991* (Cwlth)). Applications are considered using FSANZ's assessment process (figure 9.3). After FSANZ has approved or varied a standard, it notifies the FoFR, which has the power to amend, reject or seek a review of the standard. If the FoFR does not seek a review of FSANZ's decision, the standard is gazetted and registered as a legislative instrument.

Box 9.1 The Food Standards Code

The Food Standards Code (the Code) contains food standards developed by Food Standards Australia New Zealand, and applies in Australia and New Zealand unless otherwise stated. The Code is split into four chapters, covering:

- **standards that apply to all foods —** certain information must be provided on product labels, such as ingredients, date markings, and country of origin (mandatory country-of-origin labelling applies in Australia only)
- **food product standards —** contains requirements relating to specific categories of products, such as cereals; meat, eggs and fish; fruits and vegetables; and dairy products
- **food safety standards (Australia only) —** sets out food safety requirements, such as those for food safety programs, food safety practices, and premises and equipment
- **primary production standards (Australia only) —** contains primary production and processing standards for seafood, poultry, meat, dairy products, eggs (and egg products) and seed sprouts. Part 4.5 also outlines wine production requirements. The standards in this chapter cover issues such as food safety and traceability.

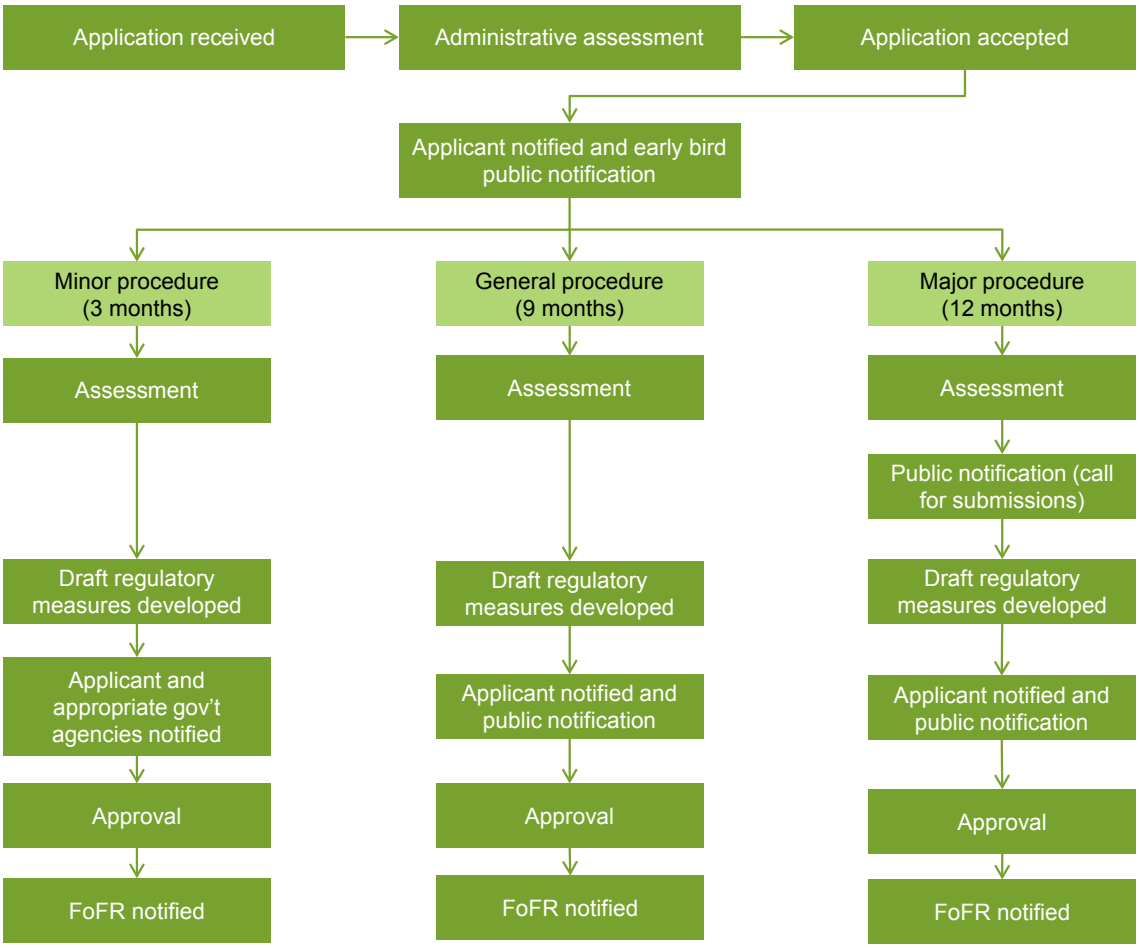
Source: FSANZ (2015d).

Gazetted standards or variations are adopted automatically, by reference and without amendment, into state and territory food laws (FSANZ 2014). Regulation of food produced at the farm level is usually covered by state and territory primary production legislation, while food Acts usually cover processing and sale requirements. Provisions in the food Acts are generally based on those in the Model Food Act developed by FSANZ.

Foods imported into Australia must comply with the Food Standards Code. The Department of Agriculture and Water Resources (DAWR) enforces the Food Standards Code through the *Imported Food Control Act 1992* (Cwlth), and may request that FSANZ provide risk assessment advice about imported foods (sub. 1). Imported food must also meet Australian quarantine requirements (chapter 7), and the labels must comply with requirements under the Imported Food Inspection Scheme (DAWR 2015f, 2015k).

Consumer law also applies to food products. The ACL is contained within the *Competition and Consumer Act 2010* (Cwlth) and is administered by the ACCC. It prohibits producers from engaging in misleading or deceptive conduct and making false or misleading representations. These provisions apply to claims about the nature of food products on labels, packaging or advertising material. States and territories also have some responsibility for consumer protection.

Figure 9.3 **FSANZ's process for assessing applications to change the Food Standards Code**



Source: FSANZ (2016a).

9.3 Regulation of food labelling

Food labels can help markets work better by providing information to consumers. The value of labels for helping consumers make informed choices was acknowledged by some participants, including Choice:

> Consumers rely on labels to enable them to buy food that is safe to consume (use-by-dates, allergen information), in line with their beliefs (free-range, organic), healthy to eat (ingredient list, nutrient information panel) and/or locally produced (country of origin labelling). (sub. 33, p. 1)

Food labels can also increase producers' competitiveness by allowing them to differentiate their products.

However, concerns were raised in this inquiry about food labelling, including that:

- current country-of-origin labels are confusing to consumers and limit the ability of Australian producers to differentiate their products
- eggs labelled as 'free-range' do not always meet consumers' expectations about how free-range eggs should be produced
- mandatory labelling of genetically modified (GM) foods is inappropriate because GM foods have been assessed to be as safe as non-GM foods
- the requirement for products labelled 'gluten-free' to have no detectable gluten is unrealistic in light of advances in technology, and is a barrier to the adoption of innovations within the food industry.

Country-of-origin labelling (CoOL)

Information about country of origin is important to Australian consumers. According to a Choice survey of 743 members conducted in 2012:

- 84 per cent of respondents said it was 'crucial or very important' to them to be able to identify if their food was *grown* in Australia
- 80 per cent said it was 'crucial or very important' to be able to identify if their food was *manufactured* in Australia (Choice 2015a).

And, based on a survey for Australian Made Campaign Limited, country of origin is becoming increasingly important to consumers — 55 per cent of consumers surveyed in 2013 reported that 'buying Australian' had become more important to them in the last 12 months (AMCL 2013). Consumers state that they buy Australian foods to support Australian farmers and manufacturing employment, and because they perceive Australian products to be of higher quality or safer than imports (AMCL 2012; Choice 2015a; Deloitte 2015).

Some evidence suggests that the country of origin of foods is most important for fresh, unprocessed or minimally processed foods (Colmar Brunton 2015). Therefore, while an effective country-of-origin labelling (CoOL) system could increase the competitiveness of the Australian food sector more broadly, there are likely to be larger benefits for farm businesses that produce fresh or minimally processed foods.

Arrangements for country-of-origin labelling in Australia are changing. A new CoOL system commenced on 1 July 2016, and there will be a two year transition period before these arrangements become mandatory on 1 July 2018 (FSANZ 2016b). Unless businesses choose to adopt the new arrangements before 1 July 2018, they must continue to comply with the current requirements (box 9.2).

Box 9.2 The current country-of-origin labelling framework

Under the Food Standards Code, country-of-origin labelling is mandatory for all packaged foods and most unpackaged foods. Some food is exempt, such as food sold for immediate consumption (for example, in a restaurant) and food made, packaged and sold on the same premises (for example, in a bakery). In addition to ensuring that claims are not false or misleading, the Australian Consumer Law provides 'safe harbour' defences for certain claims.

Mandatory country-of-origin labelling

Standard 1.2.11 of the Food Standards Code requires food sold in Australia to be labelled with its country of origin. The kinds of country-of-origin claims that must be made differ according to whether the food is packaged, and whether it consists of fresh fruit or vegetables.

- For packaged food other than fresh fruit or vegetables, the food must have a statement that identifies:
  - the country where the food was made, produced, or grown; or
  - the country where the food was manufactured or packaged; or
  - that the food is made from imported ingredients or local and imported ingredients.
- For packaged fresh fruit and vegetables and unpackaged food (including meat, fruit and vegetables), the food must have a statement that identifies its country of origin, or indicates that it is a mix of local and imported foods or a mix of imported foods.

Safe harbour defences

Businesses can be assured that their claims are not false or misleading if they meet certain criteria outlined in the safe harbour defences under Australian Consumer Law. There are three safe harbour defences in relation to country-of-origin claims.

- The general country-of-origin safe harbour defence covers claims such as 'made in', 'Australian made' and 'manufactured in'. Goods carrying such claims must have been substantially transformed in the country of origin being claimed, and 50 per cent or more of the production or manufacturing costs must have occurred in that country.
- The 'produce of' safe harbour defence requires that each significant component or ingredient of the good originated in the country being claimed, and that all, or virtually all, of the production process also took place in that country.
- The 'Grown in' safe harbour defence requires that the country being claimed could also be represented as the country of origin of the goods, or the country that the goods are the produce of. Each significant ingredient or component of the goods must also have been grown in that country.

Source: ACCC (2014c).

Confusion about the meaning of country-of-origin claims

Producers can identify a food's country of origin in any way that satisfies the Food Standards Code, and that is not false or misleading under the ACL. However, many producers use phrases that are covered under country-of-origin safe harbour defences (box 9.2), as this provides increased certainty relative to claims that are not covered by a

safe harbour defence.

The National Farmers' Federation (NFF) raised concerns about the way country-of-origin claims can be made, suggesting that it undermines Australian farmers who seek to capitalise on their reputation.

> … the current Country of Origin Labelling (CoOL) rules allow imports to masquerade as local produce, through the 'Made in Australia' claim, while making it difficult for locally grown products to achieve the perceived premium claim of 'Product of Australia'. … this undermines Australian farmers, who are seeking to capitalise on their good reputation for animal welfare, quality and above all food safety. (sub 61, p. 27)

Primary Producers SA also said that:

> It is still a major issue that shoppers wanting to support Australian and more local products find it hard to identify the true local product. … we need a system where consumers wishing to support local producers have trust and ability to buy local produce without having to interrogate every label. (sub. 41, p. 5)

In the context of honey and CoOL, Herta Klein said that:

> Honey is a commodity and not a product of elaborate manufacture so when there is only Australia honey in packaging I want to see 'Product of Australia' written on the label and not 'made in'. Consumers want to be able to shop with confidence and know where their food comes from. (sub. 38, p. 6)

Claims that consumers are confused by, and have difficulty interpreting, country-of-origin labels are supported by the findings of a number of reviews (Blewett et al. 2011; FPISG 2012; HoRSCAI 2014; SCAFPS 2012) and recent consumer research.

- Choice (2015a) found that only 12 per cent of survey respondents were able to interpret the phrase 'made in Australia' in accordance with its definition under the ACL safe harbour defence.
- Colmar Brunton (2015) found that 30 per cent of Australian consumers interpreted the phrase 'made in Australia' to mean that all the ingredients were from Australia. A similar result (32 per cent) was found by Choice (2015a).

As the New Zealand Commerce Commission explained (in relation to New Zealand origin claims), interpretations of the phrase 'made in' varies between different consumers for different products because:

> Whether a product is New Zealand made is a question of fact and degree. The relevant considerations will vary depending on the nature of the product and what consumers may understand about it. It is not possible to set out a precise formula which will prescribe exactly which products can be called 'New Zealand made'. (2015)

Confusion about country-of-origin claims may therefore arise because many consumers interpret 'made in' as referring to the origin of the ingredients, even though this is not necessarily the case under the current rules.

A new CoOL system

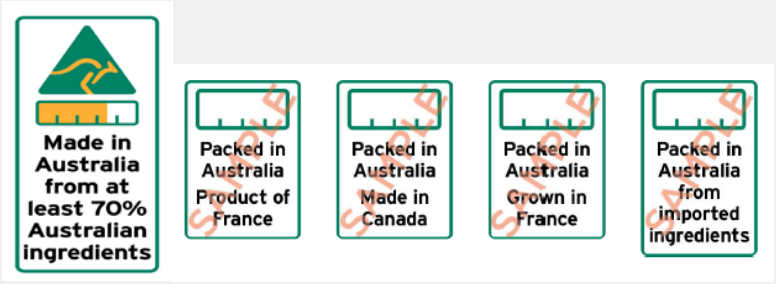
In response to concerns about consumer confusion, in March 2016, the Australian Government announced plans for a new CoOL framework (box 9.3). The objective of the new system is to increase clarity for consumers about the origin of their food, without imposing excessive costs on industry. Among other things, the new system requires products labelled 'made in Australia' to identify the proportion of Australian ingredients. It also removes the 50 per cent production cost test from the general country-of-origin safe harbour defence.

Box 9.3 The new country-of-origin labelling framework

In March 2016, the Australian and state and territory consumer affairs ministers agreed to implement a new country-of-origin (CoOL) system. Under the new system, CoOL is regulated only through a mandatory information standard under the Australian Consumer Law. The new system commenced in July 2016, and includes:

- new country-of-origin labels for priority foods (foods for which country-of-origin information has been found to be most valuable to consumers, such as fruit and vegetables, meat and meat products, fish and fish products, and dairy products)
- removal of the 50 per cent production cost test from the general country-of-origin safe harbour defence under the Australian Consumer Law. Non-food producers will also be affected by this change as safe harbour defences are available to all producers who make country-of-origin claims.
- clearer country-of-origin labels on imported priority foods
- voluntary industry provision of country-of-origin information through digital platforms
- an education campaign (funded by government) to communicate the new arrangements to consumers and businesses.

The cornerstone of the new system is that products labelled 'made in Australia' will indicate the minimum proportion of Australian ingredients. Products that are packed in Australia will also have a statement regarding the origin of the ingredients.



Producers can continue to make 'Product of Australia' claims, and in most cases, 'such claims would be equivalent to the claim that a product is 'made in Australia from 100% Australian ingredients'.

Sources: DIIS (2015a, 2015b, 2015c).

Consumer group Choice (2016b) welcomed the changes, saying that the new system was useful for consumers who want to know how much of a product's ingredients were grown locally. However, it noted that the system would be less useful to consumers who want to know the origin of imported ingredients in products labelled 'Australian made'. Producers will be encouraged to provide additional information such as the origin of key ingredients, but this will not be a requirement (DIIS 2015c).

Producers generally acknowledged that the new system provides consumers with clearer information. However, they were also concerned about the costs of the reforms, including administrative and labelling costs. Some producers supported the changes being limited to 'priority foods' (foods for which country-of-origin information was found to be most valuable to consumers) to minimise the cost burden, but others argued that it could cause consumers to be confused about why some products had the new labels and others did not (DIIS 2016). Under a dual system, businesses that produce both priority and non-priority foods could also face increased costs.

Voice of Horticulture (sub. 42) was supportive of the objective of improving the CoOL system, and welcomed the requirement to disclose the proportion of Australian ingredients. However, it did not support the use of the kangaroo logo where there are no Australian ingredients (that is, where the product has been manufactured in Australia from wholly imported ingredients), as it believed consumers would rely on the kangaroo logo as an indication that the product contains Australian ingredients.

Costs and benefits of the new system

Compared to the current system, the new system will enhance consumers' ability to identify and purchase Australian products where they have a preference to do so. The regulatory impact statement (RIS) for the new system identified the benefits to consumers as:

- the ability to purchase products that align with their preferences (and to avoid those that do not)
- knowing a food's country of origin, even if it does not change behaviour
- time savings from better visual elements of labels (DIIS 2016).

These benefits are difficult to quantify, as they depend on the value of country-of-origin information to different consumers. However, the Department of Industry, Innovation and Science (2016) calculated that the average time saving required per consumer to offset net costs to businesses in the food sector would be 11 seconds per shopping trip.[27] The RIS stated that this is likely to be exceeded, as consumers currently spend approximately 4 minutes and 48 seconds of a 60-minute shopping trip searching for country-of-origin information.

[27] The RIS assumed that there were 8.8 million shoppers in Australia who went shopping once a week, and whose leisure time was valued at $29 per hour.

If consumers prefer foods with Australian ingredients and are better able to identify those foods, businesses that produce those foods will benefit from the new arrangements. Businesses that make a country-of-origin claim (including non-food businesses) will also face reduced compliance costs due to the removal of the production cost test from the general country-of-origin safe harbour defence. This was estimated to be almost $550 million (in present value terms) over 20 years (DIIS 2016).

The largest costs imposed by the new system are administrative and labelling costs to businesses. Some businesses do not currently keep records of the percentage of Australian ingredients in their products, and will need to implement new systems to keep this information. This may require updating information technology and communications systems. Administrative costs were estimated to be $241 million over 20 years (DIIS 2016).

Businesses will also incur costs to change their labels to comply with the new requirements. These can be divided into an initial cost and ongoing costs, which can occur if there is seasonal variation in the proportion of Australian ingredients. Labelling costs will be mitigated by a 24-month transition period that aims to allow businesses to update labels within existing processes and labelling cycles. Where there is seasonal variation, businesses will also be allowed to make a statement about the average proportion of Australian ingredients as long as more specific information is provided through another source such as a website. Labelling costs over 20 years are expected to be $228 million for all packaged stock keeping units (SKUs) and $3 million for all unpackaged SKUs (DIIS 2016). (SKUs refer to each separate item in a product line. For example, each combination of fruit juice flavour and package size would be regarded as one SKU in a range of fruit juice products).

Overall, the Department of Industry, Innovation and Science estimates that the new system will deliver modest net benefits to the Australian community of $66 million over 20 years (relative to the status quo). This will be achieved primarily through a reduction in compliance costs for producers.

Would a voluntary system deliver higher net benefits?

The new CoOL system enhances consumers' ability to make effective purchasing decisions relative to the previous system. However, there is a question about whether the new arrangements would deliver higher net benefits as a voluntary system. Under a voluntary system, producers would not have to make a country-of-origin claim, and can choose to do so if they perceive that the benefits outweigh the costs. But if they do make a claim, it would have to satisfy the requirements of the new system, which would ensure that the information is accurate and is presented in a way that is easily understood by consumers.

A voluntary system could result in higher net benefits to the community because, while a mandatory system imposes costs on all producers, not all consumers' purchasing decisions are driven primarily by country of origin (Colmar Brunton 2015). The Commission considers that mandatory disclosure should only be required if it can be demonstrated that it provides higher net benefits compared to voluntary disclosure.

A number of inquiry participants pointed to the benefits of a mandatory CoOL system. For example, Choice said that:

> Food labels provide useful information for consumers and current mandatory information should be retained … Country of origin labelling is a consistent priority for consumers. (sub 33, pp. 1–2)

The NFF also said that it:

> … welcomed the proposed [CoOL] framework, including the mandatory labelling, as it will provide consumers with this understanding of where their food comes from. (sub 61, p. 27)

The underlying rationale for a mandatory system is that, unless food producers make country-of-origin information available, only they have this information. This information asymmetry can result in an inefficient system where Australian consumers are faced with imperfect information and are not able to make purchasing decisions in line with their preferences (DIIS 2016).

However, if consumers have a preference for products from certain countries, businesses selling products from those countries have an incentive to disclose country-of-origin information, and are likely to do so voluntarily (provided the benefits exceed the costs). Therefore, a mandatory system is not necessarily required to achieve the objective of '[providing] consumers with information so they can make informed purchasing decisions in line with their personal preferences' (DIIS 2015b, p. 10). Under a voluntary system, unlabelled products are likely to be from less-favoured origins, and consumers would be able to assume that this was the case. Requiring these products to be labelled may serve only to increase costs.

The fact that there are voluntary CoOL schemes in Australia operating alongside current mandatory requirements indicates that producers are not prevented from making country-of-origin claims when there are sufficient incentives to do so (box 9.4). In New Zealand, although CoOL is not mandatory, many producers choose to participate in the Buy NZ Made Campaign. Similarly, in the United Kingdom, although only some imported products are required to have CoOL, many producers choose to take part in the UK Red Tractor Scheme. Australian Dairy Farmers (sub. 63) noted that where industry-driven voluntary labelling schemes are in place, mandated arrangements are difficult to justify.

The Commission is seeking further evidence to assess the relative merits of voluntary and mandatory country-of-origin labelling.

INFORMATION REQUEST 9.1

The Commission is seeking information on whether the new country-of-origin labelling system would deliver higher net benefits to the community as a voluntary system rather than as a mandatory system.

Box 9.4 Examples of Australian voluntary country-of-origin labelling schemes

Australian Made Campaign

The Australian Made Campaign involves the use of a logo depicting a green triangle with a yellow kangaroo. The use of the logo is administered by Australian Made Campaign Limited, a not-for-profit company under contract from the Australian Government. The logo is a certification trademark that can only be used if the code of practice is met.

Australian PorkMark

The Australian PorkMark identifies pork products that contain exclusively Australian pork with a pink square. The scheme is administered by Australian Pork Limited.

Buy West Eat Best

The Buy West Eat Best program is managed by the Western Australian Department of Agriculture and Food, and allows consumers to identify food that has been grown, farmed, fished and produced in Western Australia. It is a place-of-origin rather than a country-of-origin labelling scheme.

Sources: AMCL (2016); APL (2009); Department of Agriculture and Food (2016).

Free-range egg labelling

In recent years, a segment of Australian consumers have increasingly favoured purchasing 'free-range' eggs over 'cage' or 'barn-laid' eggs. The Australian Egg Corporation Limited reported in its 2005 annual report that 14.5 per cent of eggs sold in the grocery retail market were free-range (AECL 2005). By 2014, this had increased to 39 per cent (AECL 2014).

Some consumers are also willing to pay a premium for free-range eggs, with the average price being almost double that of cage eggs (Choice 2015b). However, evidence also suggests that consumers are price-sensitive or are willing to trade off higher hen welfare for lower prices (Julie Dang & Associates 2012; Quantum Market Research 2015).

Consumers' preferences for free-range eggs are largely driven by animal welfare concerns, but are also influenced by other considerations such as taste and health (Choice 2015c; Julie Dang & Associates 2012). When consumers are asked about the conditions under

which they expect free-range eggs to be produced, they most often identify the ability of chickens to roam about freely and to access the outdoors (Choice 2012, 2014; Julie Dang & Associates 2012).

However, many consumers are unsure if eggs labelled as 'free-range' are being produced according to their expectations.

- Choice (2014) found that 28 per cent of free-range egg buyers do not have confidence that the eggs they buy are produced under conditions they expect.
- Julie Dang & Associates (2012) found that 67 per cent of consumers are not always convinced that they are getting what they expect when they buy 'free-range' or 'organic' eggs.

The difference between eggs from free-range, barn-laid or cage systems cannot be observed by consumers, so they must rely on labels for this information. As the Treasury said, 'it is relatively easy to mislead consumers and there is a financial incentive for producers to do so' (Treasury 2015b, p. 5). Choice also claimed that consumers were being 'ripped off' by some producers' claims that their eggs were free-range (2015b, p. 3). Consumers bear costs (detriment) where egg production methods that they value, and for which they have paid a higher price, have not been used.

Producers also bear costs where they have made investments in free-range production methods that align with consumers' preferences, but are unable to differentiate their products and charge a price premium over other producers who do not meet these same criteria. Some producers have sought to assure consumers of the credibility of their free-range claims by participating in voluntary free-range certification schemes, but the benefits to producers and consumers of certification schemes may be limited by the presence of numerous schemes with different standards (table 9.1).

Animals Australia (sub. 53) claimed that the large number of different schemes undermines consumer choice and information and creates confusion. Also, the standards under certification schemes do not always accord with consumers' expectations. For example, while some certification schemes have a maximum outdoor stocking density of 10 000 hens per hectare, Choice (2014) reported that only 2 per cent of free-range egg consumers believe this to be an acceptable stocking density.

What standards do consumers expect for free-range egg production?

While consumers expect free-range eggs to be produced by hens that are not confined in cages, there is conflicting evidence about the specific standards and practices that they have in mind. Julie Dang & Associates (2012) found that 26 per cent of consumers nominated 8000 to 12 000 hens per hectare as their preferred hen stocking density for free-range eggs, which differs to the results obtained by Choice (2014) (1500 hens per hectare). This may be partly due to research methodology — the Choice survey presented consumers with a text menu of options, while Julie Dang & Associates provided a

computerised diagram where the number of hens on the paddock changed according to consumers' selections on a sliding scale. Julie Dang & Associates (2012) noted that its result is higher than might be expected from qualitative feedback.

Table 9.1 **Voluntary certification schemes for free-range eggs**

Selected standards under different schemes

	Australian Certified Organic	*Free Range Egg & Poultry Australia Ltd.*	*Free Range Farmers Assoc. Inc. Vic*	*Humane Choice*	*RSPCA (Outdoors)*[a]	*Coles Free-Range*
Maximum outdoor stocking density (birds/ha)	1 500 or 2 500[b]	Unknown	750	1 500	1 500 or 2 500[b]	10 000
Do hens have access to pasture?	Yes	Yes	Yes	Yes	No[c]	No
Is beak trimming prohibited?	Yes	No	Yes	Yes	No	No
Is toe trimming prohibited?	Yes	Yes	Yes	Yes	Yes	No

[a] Certification by the RSPCA does not necessarily mean that eggs are free-range. The RSPCA certifies both eggs produced using indoor systems (barn-laid) and outdoor systems (free-range). [b] A maximum of 1500 birds/ha applies to fixed outdoor areas and a maximum of 2500 birds/ha applies to outdoor systems with rotational range management strategies in place. [c] Hens do not have to have access to pasture, but they must still have unrestricted daylight access to the outdoors.

Sources: Australian Organic (2013); FREPA (2015); FRFA Inc. (2016); Humane Society International (2015, nd); RSPCA (2015).

The NSW Farmers' Association (2015) also reported that a survey it commissioned showed almost three-quarters of consumers expected 'free-range' eggs to come from hens with a stocking density of 10 000 per hectare or more. However, closer examination of the research reveals that consumers were asked about what they thought current standards were, rather than the stocking density they would expect for 'true' free-range eggs (Quantum Market Research 2015).

Another factor that complicates an assessment of consumers' expectations is that many are unfamiliar with farming and animal husbandry practices. This is evidenced by the proportion of consumers in surveys who respond that they do not know what they think standards should be. For example, 41 per cent of respondents to a Choice survey said that they did not know what a reasonable maximum outdoor stocking density should be for hens that lay free-range eggs (Choice 2015c). After being given information about stocking densities, 20 per cent were still unsure. Julie Dang & Associates (2012) also found that 15 per cent of respondents did not know if hens should be debeaked, even after it was explained that beak treatment is used to control problems of aggressive behaviour.

If consumers are unsure about what standards they consider to be appropriate, they may be easily influenced by information provided by producer or animal welfare groups, or by the way questions are framed in consumer surveys. For example, consumers may be led to

believe that free-range eggs always embody a higher level of animal welfare, although this is not necessarily the case (chapter 5). Therefore, as Choice explained, standards for free-range eggs:

> … shouldn't be predominantly based on consumer research, but rather on a broader body of relevant independent, scientific research in conjunction with consumer research, and with consultation with all stakeholder groups. (2014)

Current regulations that affect free-range egg labelling

There is currently no nation-wide standard for when eggs can be labelled as free-range, although in March 2016 the Australian and state and territory consumer affairs ministers announced a national free-range egg labelling standard (discussed below). The new standard is expected to be implemented in 2017 (Treasury, pers. comm., 20 June 2016).

Currently, free-range egg labelling is primarily regulated through the ACL, where producers are prohibited from making false and misleading claims. Therefore, producers must consider whether their 'free-range' claims could be deemed false or misleading. This applies whether or not they participate in a voluntary certification scheme. The ACCC has prosecuted egg producers on several occasions for making false or misleading 'free-range' claims.[28]

Some states and territories have also introduced egg labelling regulations.

- In the ACT, different types of eggs must be displayed separately at retail outlets, and displays must be labelled with the production method used. The legislation also provides definitions for 'cage', 'barn', 'aviary' and 'free-range' eggs.
- In South Australia, the Government recently announced a voluntary industry code for free-range eggs to help consumers purchase free-range eggs with confidence (SA Attorney-General's Department 2013). Producers that adhere to the code can display a certified trademark logo (SA Attorney-General's Department 2016).

Animal welfare arrangements can also affect how eggs are labelled — a definition of a free-range production system under animal welfare regulations can be used as a basis for an egg labelling standard. Under the Model Code of Practice for the welfare of poultry, free-range production systems are defined as having a maximum stocking density of 1500 hens per hectare, unless range rotation practices are used. Some have interpreted this to mean that if these conditions are met, the Model Code does not specify a maximum free-range stocking density (Treasury 2016b).

The Model Code is voluntary in most states. Queensland, which has adopted the Model Code into its animal welfare regulations, allows up to 10 000 hens per hectare[29] in

---

[28] See, for example, *ACCC v Pirovic Enterprises Pty Ltd (No 2)* [2014] FCA 1028, *ACCC v RL Adams Pty Ltd* [2015] FCA 1016 and *ACCC v Derodi Pty Ltd* [2016] FCA 365.

[29] 10 000 hens per hectare is equivalent to an average of one hen per square metre.

free-range production systems. The Model Code is currently being converted into national standards and guidelines, and this process will result in the development of mandatory standards and voluntary guidelines to be implemented by states and territories (chapter 5).

A national free-range egg labelling standard

In March 2016, in response to consumer confusion, consumer affairs ministers from the Australian and state and territory governments agreed to a national standard for free-range egg labelling (box 9.5). The new arrangements include an information standard under the ACL that allows a maximum outdoor stocking density of 10 000 hens per hectare if a free-range claim is made and requires disclosure of hen stocking density.

Box 9.5 **New arrangements for free-range egg labelling**

In March 2016, the Australian and state and territory consumer affairs ministers agreed to new arrangements for free-range egg labelling. The new arrangements comprise two elements: an information standard and a safe harbour defence.

The information standard provides a definition for the term 'free-range' and allows a maximum outdoor stocking density of 10 000 hens per hectare. It also requires producers who claim that their eggs are free-range to prominently disclose the outdoor hen stocking density on the label.

While the exact wording of the definition will be finalised according to legal advice during the drafting of the legislative instrument, the following has been proposed.

> Free range eggs must come from laying hens that had meaningful and regular access to an outdoor range where the hens were free to roam and forage during daylight hours except on days when on the open ranges such things as weather conditions endangered the safety or health of the laying hens, or predators were present, or the laying hens were being medicated. (Treasury 2016b, p. 16)

Compliance with the requirements above provides producers with a safe harbour defence against allegations that they have engaged in false and misleading conduct.

Source: Treasury (2016b).

Some producers have welcomed the new standard — the NFF and Victorian Farmers' Federation said that a national standard would enable consumers to understand how their free-range eggs were produced, and help them make informed choices about their food (NFF 2016a; VFF 2016). A spokesman for Egg Farmers Australia said that the new standard reflected a common sense approach backed by science (Kotsios 2016). However, some producers with lower stocking densities were critical of the standard. Freeranger Eggs, whose flock has a stocking density of less than 750 hens per hectare (approximately one hen per 13.3 square metres), said that the new standard would make it even more complex for consumers to make an informed purchasing decision, and that 'Ministers for Consumer Affairs were nobbled by the big corporations' (Freeranger Eggs 2016).

Animal welfare and consumer groups have also expressed disappointment at the new standard. The RSPCA said that the decision '[put] the interests of big business ahead of consumers, with hen welfare coming a distant third', and that the new standard 'failed to

provide the animal welfare assurances that consumers were seeking' (RSPCA 2016a). It is calling for more prescriptive standards in the interests of animal welfare (RSPCA 2016b).

Choice was concerned that consumer affairs ministers were 'locking in' misleading egg labels, and said that:

> … eggs which come from hens that don't go outside and have high stocking densities don't meet consumer expectations, and don't deserve a 'free-range' label. (Choice 2016c)

It urged consumers to boycott free-range eggs that had been produced under conditions that did not meet the Model Code.

The costs and benefits of the new arrangements

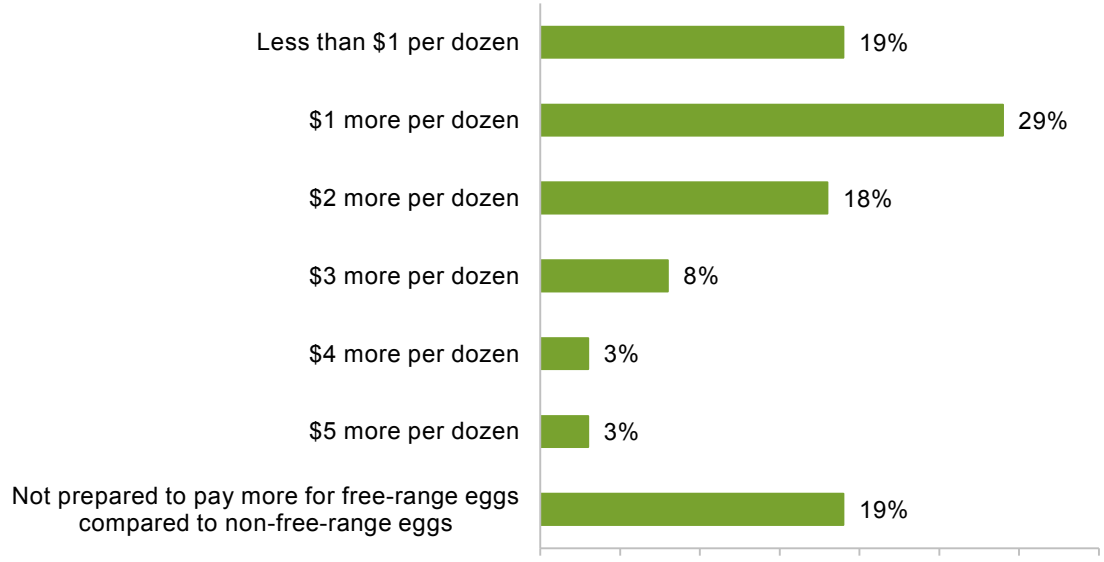
The new arrangements will make it easier for consumers to purchase eggs that align with their expectations. The benefit to consumers can be measured in terms of their willingness to pay — Choice (2015c) found that most consumers say that they are willing to pay for the assurance that eggs labelled 'free-range' meet their expectations (figure 9.4).[30] While the new definition of 'free-range' does not appear to meet all consumers' expectations (as discussed above), consumers can still benefit from being able to compare the stocking densities of different free-range eggs.

Producers benefit from the clarity provided by the information standard and from the legal protection afforded by the safe harbour defence. An information standard decreases the risk of the definition of free-range being subject to regular change in response to court judgments, and should reduce the time producers spend monitoring developments in case law. It is also likely to decrease the time producers spend on monitoring and maintaining compliance.

However, producers also face costs to understand the new arrangements (estimated to take 24 hours) and to revise labels to meet the new requirements. The RIS conducted by the Treasury estimated upfront compliance costs to businesses of $4.9 million, which are expected to be offset by annual compliance savings of $0.7 million. Over ten years, there is estimated to be an average annual compliance saving of $0.2 million (Treasury 2016b).

[30] While surveys such as that conducted by Choice can provide useful information, these results only indicate consumers' stated willingness to pay, which is not necessarily the same as the amount they would actually pay. Revealed preference is the true measure of willingness to pay, and as outlined in chapter 5, consumers' stated willingness to pay is not always matched by actual behaviour.

Figure 9.4 **Consumers' willingness to pay a premium for free-range eggs[a]**



[a] Survey respondents were asked the question 'if a mandatory national standard for free-range eggs was in place which meets consumers' expectations of free-range, how much more would you be willing to pay for free-range eggs compared to non-free-range eggs?'.

Source: Choice (2015c).

Greater certainty, but standards should also be based on scientific evidence

The new arrangements are likely to provide greater certainty to consumers. A national standard gives consumers confidence that free-range eggs meet a prescribed minimum standard, and that this is consistent across different producers. The requirement to disclose hen stocking densities also allows consumers to select their preferred stocking density and provides a way for producers that employ less intensive farming methods to differentiate their products. In addition, the standard allows producers to make investments in production infrastructure with confidence.

The purpose of the reforms is to increase consumer confidence and certainty regarding egg labelling, rather than to prescribe certain animal welfare standards (Treasury 2015b). However, as noted above, production and labelling standards are inextricably linked. Further, poultry welfare outcomes are affected by the production system used and welfare is one of the key reasons why consumers purchase free-range eggs.

The Commission considers that standards for free-range egg labelling should be based on scientific evidence about hen welfare and egg production. This evidence should be balanced against consumer and community expectations about what is an acceptable level of welfare, as well as the economic costs associated with achieving these outcomes.

There should also be consistency between animal welfare standards and egg labelling standards. As such, there may be a need to revise the free-range egg labelling standard once the Model Code of Practice for poultry has been converted into national standards and guidelines (chapter 5).

Mandatory labelling of genetically modified foods

Under the Food Standards Code, GM foods, ingredients, additives or processing aids that contain novel DNA or protein are required to be labelled with the words 'genetically modified' (FSANZ 2013a). Labelling is also required when the genetic modification results in altered characteristics, such as increased oleic acid content in soybeans (FSANZ 2013a). Foods which are derived from GM crops but which do not contain novel DNA or protein and do not have altered characteristics, such as some canola oils, are not required to be labelled.

Industry participants submitted that the requirement to label GM foods is invalid, given that they have been assessed by regulators to be no less healthy than conventional (non-GM) foods. For example, AusBiotech stated that:

> The labelling of foods as GM … has nothing to do with the health or safety of food. AusBiotech believes that FSANZ's approach to the labelling of GM foods is at odds with its otherwise best-practice, evidence-based approach to food-safety regulation. (sub 20, p. 10)

A number of participants also argued that mandatory labelling requirements implied that GM foods are unsafe and reinforce misperceptions.

> FSANZ requires labelling of genetically modified organisms in such a way as to confer, in the consumer's mind, a 'danger warning on the product' (AFGC, sub. 28, p. 16)

> Mandatory labelling for non-health and safety reasons can imply a regulatory concern where none exists and can reinforce misconceptions in the community. (CropLife, sub. 14, p. 12)

> AusBiotech members suggest that market acceptance has been negatively influenced by poorly supported, mandatory-labelling requirements and a public perception that if GM products require special labelling and are banned in some states then there must be uncertainty regarding the safety of these foods. (AusBiotech, sub. 20, p. 5)

The purpose of mandatory GM labelling in Australia is not to protect consumers against unsafe foods, but rather to help consumers to make an informed choice about the foods they buy (FSANZ 2013a). As discussed in chapter 6, Australia's robust gene technology regulatory framework requires that GM organisms and food are assessed for their impact on human health and safety and the environment before they are approved. FSANZ has declared, based on a rigorous assessment process that considers credible scientific evidence, that approved GM foods are as safe and nutritious as similar conventional foods.

Internationally, the purpose of GM labelling is also to provide consumers with information, rather than to ensure food safety (European Commission 2016b, for example). International approaches to GM labelling vary (box 9.6).

Box 9.6 **International approaches to GM labelling**

- In the European Union, foods must be labelled if they contain genetically modified (GM) ingredients or if they are produced from GM crops, even if no GM material is present.
- In the United States, Vermont has enacted laws requiring GM labelling, which came into effect in July 2016. Maine and Connecticut have also passed laws adopting mandatory GM labelling, but these laws only take effect if a minimum of four neighbouring states pass similar legislation, which has not been achieved. The US Congress is currently proposing a law which does not require GM foods to be labelled, and instead sets up a voluntary certification program. If passed, this will override state requirements such as those in Vermont.
- Some countries, such as Singapore and Canada do not require GM foods to be labelled.

Sources: European Commission (2003); GMA (2016); MOFGA (2016): Pompeo (2015).

GM labelling is a consumer value issue

Given that the safety of GM foods is addressed through FSANZ's regulatory processes, the labelling of GM foods is a consumer value issue. Mandatory GM labelling aims to provide consumers with information about the GM status of foods, so that they are able to make decisions in line with their values.

However, as with other consumer values such as country of origin and 'free-range', the aim of ensuring consumers have information is not a sufficient rationale for mandatory labelling. Where consumers prefer to purchase GM-free foods (for example, if they believe that gene technology is unethical, unsustainable or unsafe), producers have an incentive to voluntarily label their products as 'GM-free'. Many Australian producers do make such claims (GM-Free Australia Alliance 2014), which demonstrates that the market is able to respond to consumers' preferences where the benefits of doing so outweigh the costs.

Some defend the need for mandatory GM labelling on the basis that it allows consumers to choose non-GM foods that they believe to be safer or healthier. For example, in its submission to the Blewett review, Madge Australia said that:

> Consumers are expected to *choose* to eat healthily, and are assumed to have the choice to eat non-GM rather than GM foods if they desire. However, **consumers cannot make those choices unless they are given adequate information** [sic], and food labelling is an important part of that. (2010, p. 17)

Consumers hold varying beliefs about the health and safety of GM foods, and may prefer not to purchase GM foods based on these beliefs. However, it is difficult to justify a mandatory labelling regime on the basis of providing information to address these concerns, given that approved GM foods have been assessed by regulators to be as safe as conventional foods. Labelling requirements should align with regulatory assessments, and where consumers remain concerned, the market is likely to respond through voluntary labelling.

Benefits and costs of mandatory GM labelling

The benefits of mandatory GM labelling depend on the extent to which labels allow consumers to avoid products that do not align with their preferences. That is, if consumers prefer not to purchase GM foods, mandatory labelling that requires an explicit declaration of GM ingredients means that consumers can easily identify which products to avoid. However, while many consumers state that they want GM labelling on foods (FSANZ 2003), some research has found that GM status is often not a high priority in consumers' purchasing decisions (FSANZ January, 2003; WA DAF 2011).

Inquiry participants submitted that mandatory GM labelling imposes costs by causing consumers to (incorrectly) believe that GM foods are unsafe. However, evidence of this is inconclusive.

- Lusk and Rozan (2008) found that US consumers who believe that the government has a mandatory labelling policy for GM foods are more likely to believe that GM foods are unsafe compared to those who believe that no such policy is in place, but it is unclear if this relationship is causal (Costanigro and Lusk 2014).
- Costanigro and Lusk (2014) found that the signalling effects of GM labels (the extent to which the existence of a label itself influences views about food safety) are likely to be small. However, this research did not differentiate between the effect of the mere presence of a label and the effect of a label required by government, which may be larger. At the same time, it may be difficult for consumers to determine from the label whether it was required by government.
- Tegene et al. (2003) found that consumers' demand for GM foods depended on the source of the information they received (for example, whether the information was from a biotechnology company or environmental organisation), but they did not test if demand was affected by the knowledge that labels were mandated by government.

Another potential cost of mandatory GM labelling is reduced consumer choice. Research suggests that when governments require GM labelling, producers face an incentive to swap GM ingredients for non-GM ingredients because of the lack of significant profit incentives and low expected market share for GM products (Carter and Gruère 2003). If this is the case, the number of products available with GM ingredients at the retail level would decrease, which in turn would mean less product diversity and choice for consumers. Carter and Gruère (2003) use this theory to explain why, in countries with mandatory labelling such as Australia, New Zealand and Japan, there are few products at the retail level containing GM ingredients.

The Commission's view

GM labelling is a consumer value issue rather than a food safety issue. If consumers prefer to purchase non-GM foods, the Commission sees no impediments to producers voluntarily

making such claims, and therefore considers that GM labelling should be voluntary rather than mandatory.

Despite Australia's robust gene technology regulatory framework, health and safety concerns about GM foods remain (chapter 6). In these cases, GM labels are likely to be used as an indicator of health and safety. However, governments should not support the use of labels to address health and safety concerns where regulators have determined that approved GM foods are as safe and nutritious as their conventional counterparts. Governments and regulatory agencies also have a role in promoting information about the actual risks and benefits of GM foods, as well as the regulatory processes that are in place to protect the community (chapter 6).

DRAFT RECOMMENDATION 9.1

Food Standards Australia New Zealand should remove the requirement in the Food Standards Code to label genetically modified foods.

Gluten-free labelling

Gluten-free labels enable consumers who have coeliac disease or a non-coeliac gluten sensitivity to easily identify foods that meet their dietary requirements. As such, they play an important role in ensuring food safety for some consumers.

Under the Foods Standards Code, products labelled as 'gluten-free' must not contain any:

- detectable gluten
- oats or oats products
- cereals containing gluten that have been malted, or products of such cereals.

This differs to the standard under the Codex Alimentarius[31], where gluten-free foods may have gluten levels of up to 20 parts per million (ppm)[32] (FAO and WHO 2008). The United States and European Union have adopted the Codex approach (European Commission 2009; US Food and Drug Administration 2015b).

Australia's regulations mean that whether or not a product can be labelled 'gluten-free' depends on the state of gluten-detection technology. In 2000, when the current standards were put in place, the technology's limit of detection was 30 ppm. However, by 2010, this

[31] The Codex Alimentarius (Codex) is a set of harmonised international food standards developed by the World Health Organization and the Food and Agriculture Organization of the United Nations. Codex standards are voluntary, but form the basis of food safety legislation in many countries (WHO and FAO 2016).

[32] This is equivalent to 20 milligrams per kilogram.

had decreased to 3 ppm (Price 2010). Therefore, some foods that were previously labelled gluten-free can no longer be labelled as such. There is some evidence that suggests that the current levels at which gluten can be detected are not enough to harm most gluten-intolerant consumers (Catassi et al. 2007). However, gluten sensitivity varies among gluten-intolerant consumers (Akobeng and Thomas 2006; Catassi et al. 2007; US Food and Drug Administration 2011).

If the level of gluten that can be detected is not sufficient to harm gluten-intolerant consumers, the current standard may impose unnecessary costs on the community. Food producers who want to label their products as gluten-free are likely to face increasing costs in achieving the gluten-free standard, and this cost could be passed on to consumers. Consumers who rely on gluten-free labels are also likely to experience a reduction in food choices if producers choose not to make gluten-free claims due to prohibitive costs.

The Commission also heard that current regulations are posing a barrier to the adoption of innovations, and in particular the commercialisation of an ultra-low gluten barley developed by the CSIRO (box 9.7).

Box 9.7 The ultra-low gluten barley

In 2015, researchers at the CSIRO successfully developed a hulled barley with reduced levels of hordeins, the type of gluten found in barley. This ultra-low gluten barley is produced using conventional (non-GM) breeding techniques, and contains gluten levels of below 5 parts per million (ppm). It can be used in malt products or brewed beverages such as beer. Use of the ultra-low gluten barley would provide some gluten-intolerant consumers with a wider range of food choices.

However, producers in Australia have been reluctant to commercialise this innovation. As it is a barley and the gluten can be detected, under the current Australian food standards, producers who commercialise this innovation would not be able to make a gluten-free claim.

The CSIRO is therefore focussing on commercialisation opportunities in the United States and European Union, where products labelled 'gluten-free' can contain barley as long as the gluten content does not exceed 20 ppm.

Sources: CSIRO (2015e); DIIS (pers. comm., 22 April 2016); European Commission (2009); US Food and Drug Administration (2015b); Tanner et al (2016).

Determining a 'gluten-free' threshold

Determining food safety thresholds involves taking into account the scientific evidence, as well as making judgments about the level of risk that the community considers appropriate and is willing to accept. This is especially true in the case of determining a gluten-free threshold, where gluten-intolerant consumers have varying levels of sensitivity, and small amounts of gluten in individual foods can have a cumulative adverse impact (Catassi et al. 2007).

The science regarding the level of gluten that can be tolerated by most gluten-intolerant consumers is inconclusive.

- In 2006, a review of the scientific literature on tolerable amounts of gluten for people with coeliac disease was conducted on behalf of the UK Food Standards Agency (Akobeng and Thomas 2006). The review found insufficient evidence to propose a clinical threshold dose of gluten or a threshold concentration of food products that would be tolerated by all people with coeliac disease.
- A similar review was conducted by Cochrane Australia (on behalf of Coeliac Australia), using more up-to-date evidence. The review concluded that a lack of robust scientific evidence precluded the establishment of a definitive threshold that is safe for all people with coeliac disease to consume (Cochrane Australia 2016).

Catassi et al. (2007, p. 165) found that an intake of 10 mg of gluten per day appeared to be safe for most consumers, and that 'the threshold of 20 ppm keeps the intake of gluten from "special celiac food" well below the amount of 50 mg/d, which allows a safety margin for the variable gluten sensitivity and dietary habits of patients'.

However, a study by the US Food and Drug Administration (FDA) found that:

> … a less than 1 ppm level of gluten in foods is the level of exposure for individuals with [coeliac disease (CD)] on a [gluten-free diet] that protects the most sensitive individuals with CD and thus, also protects the most number of individuals with CD from experiencing any detrimental health effects from extended to long-term exposure to gluten. (2011, p. 46)

Despite this finding, in 2013 the United States adopted the Codex threshold of 20 ppm. In doing so, the FDA evaluated the costs and benefits of adopting a more stringent standard than what could be tolerated by most consumers with coeliac disease. (The scientific evidence considered by the FDA suggested that this was 20 ppm). The FDA considered that lowering the threshold beyond 20 ppm would increase the risk of US consumers with coeliac disease not following a gluten-free diet because of decreased food choices or more expensive food. It therefore concluded that a threshold of 20 ppm was sufficiently protective of public health in the United States, and that 'the varying needs of individuals with celiac disease may be best addressed by focused education and outreach' (US Food and Drug Administration 2013, p. 47160).

It is not within the scope of this inquiry to determine the appropriate gluten threshold for 'gluten-free' foods in Australia. However, the Commission notes that FSANZ, as the competent authority in developing and reviewing food safety regulatory measures, must have regard to 'the need for standards to be based on risk analysis using the best available scientific evidence' (*Food Standards Australia New Zealand Act 1991* (Cwlth), paragraph 18(2)(a)).

The costs of a stringent standard, such as lost market opportunities and less choice for consumers, must be balanced against the food safety risks to gluten-intolerant consumers, and there is a question about whether these trade-offs are appropriately balanced. The

Australian Government's commitment not to depart from international standards unless there is a good reason to do so (Australian Government 2014b) should also be considered.

DRAFT RECOMMENDATION 9.2

Food Standards Australia New Zealand should review the standard for the level of gluten allowed in foods labelled as 'gluten-free', taking into account scientific evidence, international standards and risks to human health, and set a maximum allowable parts per million level for foods to be labelled 'gluten-free'.

9.4 Regulation of food safety in the production process

The benefits of food safety regulations were acknowledged by a number of industry bodies. For example, the Australian Chicken Meat Federation said that:

> Food safety is critical to the chicken industry, and regulation in this area is necessary to protect consumers and also the reputation of the product and the industry itself … The ACMF therefore believes that all producers of chicken meat, no matter how big or small, must comply with a common set of standards and compliance arrangements. (sub. 40, p. 7)

Similarly, the Australian Dairy Farmers said that:

> Australia has comprehensive food standards and a system of legislation and regulation across the whole dairy production and processing chain. The system monitors compliance with food standards to ensure the integrity of the dairy supply chain … The dairy sector would not like to see the model we have worked hard at over many years be devalued … (sub. 63, p. 5)

However, concerns were raised about:

- the high costs (relative to other options) of the requirement for individual eggs to be stamped, to enable them to be traced
- the costs and duplication of food safety audits, including those required by regulators, food retailers and importing countries.

Egg stamping

All states and territories require eggs to be individually stamped with a unique marking that identifies the producer or processor of the egg. (Some exemptions apply for small egg producers). With the exception of Queensland which introduced egg stamping in 2005, egg stamping was progressively introduced in Australian states and territories from 2011 following the introduction of Standard 4.2.5 in the Food Standards Code (the Primary Production and Processing Standard for Eggs and Egg Products). FSANZ developed the new standard 'in response to the large number of foodborne illness outbreaks suspected of being linked to eggs or egg products' (FSANZ 2015c).

Egg stamping is used as a traceability tool in the event of an outbreak of salmonellosis caused by contaminated eggs. Traceability enables the source of the contamination to be quickly identified, and means that only eggs that are likely to be unsafe can be recalled or withheld from sale. In the event of an outbreak, this can reduce financial losses to the egg industry and protect the reputation of producers not involved in the contamination.

While traceability has benefits for the egg industry, there are also costs involved in setting up traceability systems. The system adopted should be the one that achieves the objective with the highest net benefit. That is, egg stamping would only be justified if the benefits exceeded the costs and it delivered superior traceability compared to other options.

The NSW Egg Farmers' Association argued that the introduction of egg stamping was 'based on faulty and inaccurate information and its cost outweighs the benefits to the community and to the industry' (sub. 7, p. 1).

> Egg stamping … has little to do with improvement to food safety or improvement in the ability to control outbreak. The financial burden of this component of the FSANZ Standard when incorporated into the NSW Cost Benefit Analysis (2005) results in a cost that outweighs the benefits and therefore is contrary to COAG National Competition Principles Agreement requiring that the benefits of the proposed legislation be assessed to ensure they are greater than the implemented costs. (sub. 7, p. 1)

It also raised concerns about the RIS used to justify egg stamping.

Concerns about the costs of egg stamping are not new. In its final assessment report for the (then) proposed Primary Production and Processing Standard for Eggs and Egg Products, FSANZ reported that:

> Several submitters raised concerns about the specific nature of the traceability requirement in that it required shell eggs to be stamped. This could impose undue costs, particularly on small businesses. (FSANZ 2011a, p. 44)

FSANZ (2011a) stated that it addressed these concerns by assessing the impact of egg stamping on small producers as part of its RIS.

Weighing up the costs and benefits of egg stamping

Egg stamping was introduced as part of the Primary Production and Processing Standard for Eggs and Egg Products, which also includes requirements relating to waste disposal, ensuring producers have the necessary food safety skills and knowledge, bird health and other food safety elements. The purpose of the standard is to reduce the incidence of foodborne illness from *Salmonella* bacteria by minimising the prevalence and concentration of this pathogen in eggs and egg products (FSANZ 2011a). The costs and benefits of the standard were outlined in the RIS published by FSANZ (2011b). The compliance costs for egg producers and processors in Queensland and Tasmania were excluded as these businesses were already required to comply with a comparable food safety scheme.

FSANZ (2011b) estimated that the initial cost to the industry of egg stamping would be almost $3 million, with additional ongoing annual costs of about $1.9 million. When divided between small and large egg producers, FSANZ estimated that $2.8 million of the initial cost would be borne by large egg producers (those with more than 600 hens) and $106 900 by small egg producers. Of the ongoing annual cost, $800 000 would be borne by large producers and $1.1 million by small producers. The costs of egg stamping represented about 65 per cent of the total costs of the standard.

The NSW Egg Farmers' Association (sub. 7) said that the RIS underestimated the cost of egg stamping. It estimated that, for large producers, realistic costs were $3.9 million in initial costs and $1.1 million in ongoing costs. It agreed with the FSANZ estimates for small producers.

In some jurisdictions, governments have introduced measures to mitigate the costs of egg stamping for small producers. In Victoria, there is an exemption from egg stamping for producers with fewer than 50 chickens, and producers of duck and quail eggs (VDEDJTR 2016a). In New South Wales, an exemption applies for egg farmers that produce less than 20 dozen eggs a week and sell them direct from the farm gate, or use those eggs in a fundraising activity where the eggs will be cooked (NSW Food Authority 2015a). The New South Wales Food Authority also provides free hand-held, self-inking stamps to businesses that produce less than a thousand eggs a day (NSW Food Authority 2015a, 2015b).

The benefits of egg stamping are difficult to ascertain. The RIS did not identify what proportion of the benefits were due to the traceability component of the standard relative to the other aspects. FSANZ expected that the standard as a whole would reduce the burden of egg-related disease by 20 to 50 per cent (estimated conservatively), improve the reputation of producers, reduce the risks that producers face in an outbreak, and deliver savings to government through reduced surveillance, recall and investigation of outbreaks.

And, although the RIS discussed the costs and benefits of egg stamping in the context of traceability, no analysis was conducted on the additional benefits that egg stamping would deliver compared to alternative traceability systems, such as labelling on egg cartons for eggs sold to consumers or requiring restaurants and caterers to keep records of the eggs they receive.

Does egg stamping deliver superior traceability compared to other arrangements?

Current arrangements enable traceability in the retail sector

Most eggs for retail sale in Australia can be traced using the information on egg cartons. Under Standard 1.2.1 of the Food Standards Code, food in a package for retail sale must have a label that states the:

- name of the food

- lot identification number (or other information that allows lot identification)
- name and address of the supplier
- use-by or best-before date.

Eggs that are not sold in cartons are not covered by the regulation. However, as the majority of consumers buy eggs from supermarkets and other retail outlets where cartons are used (FSANZ 2009), eggs sold without cartons make up a small proportion of the retail egg market. And, as discussed below, consumers who buy eggs that are not sold in cartons are likely to know the source of their eggs.

Egg stamping has the potential to enhance traceability if eggs cannot be traced using information on cartons. Roberts and Runge (2011) suggest that egg stamping could deliver benefits where eggs are swapped between cartons at retail outlets or where consumers reuse egg cartons, particularly at farmers' markets.

It is unclear how often consumers swap eggs between cartons at retail outlets. The Commission did not find evidence that egg swapping is a widespread practice, and while some consumers do check individual eggs within a carton before purchase (FSANZ 2009), it is more likely that they would return the carton to the shelf and select another if they are unsatisfied with the quality of the eggs.

Consumers could move eggs to a different carton or container at home, after purchase, because of a broken egg. A consumer survey by FSANZ (2009) found that 35 per cent of consumers do this. They could also be trying to consolidate eggs from different cartons. Egg stamping allows eggs to be identified even if they are removed from their carton. However, other policy options could achieve the same objective at a lower cost. Consumer education, for example, could communicate the importance of egg traceability and encourage consumers to retain traceability information.

Some consumers do reuse egg cartons. FSANZ (2009) found that 16 per cent of households 'always' or 'almost always' reuse egg cartons, while 15 per cent 'sometimes' reuse them. However, egg cartons are more likely to be reused by households that obtain their eggs from backyard producers, their own chickens or farmer's markets, compared to households that buy their eggs from supermarkets (FSANZ 2009). It is not clear that egg stamping in these instances would confer significant additional traceability benefits, as end-consumers are likely to know the source of their eggs. And regardless, the current arrangements mean that eggs in reused cartons may not always be stamped, either because they are not being sold, or because of exemptions for small egg producers.

In 2005, when the New South Wales Government introduced a food safety scheme for eggs (which did not include a requirement for egg stamping), the New South Wales Food Authority acknowledged that labelling requirements were sufficient to enable traceability:

> The Australian New Zealand Food Standards Code Standard 1.2.2 presently requires traceability of food back to the manufacturer or supplier by printing name of food, lot identification, and name and address of the supplier on the carton. The requirement for lot

> identification can be satisfied by Standard 1.2.5 Date Marking of Packaged Food … There is no further requirement for stamping of eggs or use of a unique identifier. (NSW Food Authority 2005, p. 27)

It also noted that there would be 'a need for some education and enforcement of traceability where recycled cartons are used' (NSW Food Authority 2005, p. 27).

Current arrangements also enable traceability for eggs in the catering sector

Requirements under the Food Standards Code also enable traceability for eggs sold to restaurants and caterers. Under Standard 1.2.1, food sold to a caterer in a package must have a label that has lot identification information and date markings (among other things). If the food is not sold in a package, such information must be provided to the caterer with the food. The information required on labels of food for retail sale, including the name and address of the supplier, must also be provided to caterers.

In addition, under Standard 3.2.2, food businesses must be able to provide the name and address of the supplier of any food they receive, if asked by a regulator. This requires food businesses to maintain records. Businesses engaged in the wholesale supply of foods must also have a system to ensure the recall of unsafe food. Standard 3.2.2 enables traceability one step forward and one step back at every stage in the supply chain (FSANZ 2012).

Identifying individual eggs does not necessarily enhance traceability

While egg stamping identifies the source of individual eggs, it is unclear if it improves traceability compared to other arrangements such as labelling egg cartons or requiring businesses to keep records. Egg stamping is not useful where eggs have been used or discarded before an investigation commences (Moffatt and Musto 2013). Traceability information available on the carton or provided with the food (which are more likely to have been retained by consumers and food businesses) could be used to assist in an investigation.

Further, egg stamping is likely to be of limited use (relative to traceability information on cartons) in instances where food is made using large quantities of eggs from multiple cartons, as occurs in restaurants and other food outlets.

In the absence of detailed analysis of the costs and benefits of egg stamping relative to alternatives traceability systems — such as labelling on egg cartons or record-keeping by food businesses — it is difficult to assess whether egg stamping provides the highest net benefits to the Australian community. Based on the evidence available to the Commission, it does not appear that egg stamping delivers superior traceability than labelling on egg cartons or requiring businesses to keep records, and the costs of egg stamping are likely to be considerably larger. The Commission is seeking further information about the costs and benefits of egg stamping relative to alternative traceability systems for eggs.

INFORMATION REQUEST 9.2

The Commission is seeking information on the costs and benefits of egg stamping relative to alternative traceability systems for eggs (such as labelling on egg cartons and requiring food businesses to keep records). Are there examples where the source of an outbreak of salmonellosis caused by eggs could not have been traced in the absence of egg stamping?

Food safety audits

Food safety audits ensure that businesses have systems in place that minimise the risk of foodborne illness. As the Western Australian Government explained:

> … [t]he purpose of food safety audits is to ensure that a food business is adhering to its food safety program/quality assurance system, and hence, safe food production and processing requirements. This not only provides assurance to government and the public as to the safety of the food, but also demonstrates to international markets that there are adequate controls in place to protect Australia's clean, green and safe food environment, and maintain a viable and attractive export market for agriculture. (sub. 54, p. 40)

Food safety audits can be conducted for regulatory purposes or to satisfy the commercial demands of customers such as supermarkets and quick-service retailers. If producers are required to undergo multiple audits (whether regulatory or commercial) and there is duplication in audit requirements or audits achieve similar outcomes, unnecessary burdens can arise. However, given that commercial audits do not give rise to regulatory burdens, the focus of this discussion is on the burden imposed on primary producers by regulatory audits. Discussion of commercial audits may be useful only if it helps to identify ways to reduce regulatory burdens.

Regulatory food safety audits

Audits are conducted by, or on behalf of, regulatory authorities to verify compliance with domestic food safety regulations or to satisfy export requirements. Businesses are generally audited against a food safety management program which is approved by the relevant authority, and which may be a condition of a business licence. Food safety management programs identify potential food safety hazards and document the systems used to manage them.

Under the domestic food regulation system, primary producers such as dairy businesses, producers and processors of eggs and egg products, and businesses that handle, process or store meat are required to have food safety management programs. Businesses that export food (except for exporters of plants and plant products) are required to have Approved Arrangements, which include food safety management controls. Domestic food audits are

required by state and territory authorities, while audits for export purposes are required by the Australian Government.

Audit duplication can arise if export establishments are required to undergo audits by both state and Australian Government regulatory authorities. The Australian Food and Grocery Council (AFGC) explained that:

> The State authorities are primarily responsible for food safety. Due to export certification requirements the Commonwealth has also become involved. There are overlaps between State and Federal jurisdictions in this area. (sub. 28, p. 18)

In some states and territories, domestic food regulations require audits by state and local governments. The Western Australian Government submitted that:

> Some food businesses undergo audit or inspection by a state and federal regulator … and can subsequently be inspected by a local government officer … (sub. 54, p. 38)

Governments have sought to reduce the burden of regulatory audits

Governments have arrangements in place to reduce the burden of regulatory food safety audits. For example, agreements between DAWR and state authorities allow one regulatory authority to conduct audits on behalf of the other, thus minimising duplication (DAWR, pers. comm., 5 April 2016). The South Australian Government said that:

> PIRSA [Primary Industries and Regions South Australia] and DAWR have a MOU to reduce regulatory burden where a business may be captured under Primary Production (Food Safety Schemes) regulations and Export Orders. (sub. 58, p. 29)

This has allowed audits for domestic and export purposes in the red meat industry to be streamlined to a large degree (South Australian Government, sub. 58).

Similar arrangements exist in the dairy sector (box 9.8). DAWR (pers. comm., 5 April 2014) said that work to streamline domestic and export audits has been undertaken for prescribed goods including eggs, poultry, meat and game products, although some of this work is yet to be completed.

Other measures that governments have adopted to reduce the burden of regulatory food safety audits include:

- risk-based auditing, where audit frequency depends on the outcomes of previous audits. For example, all food businesses in New South Wales and South Australia are subject to risk-based auditing (NSW Food Authority 2016; SA Health 2016)
- the National Food Safety Audit Policy, which promotes national consistency in the management of food safety audits and auditors (Implementation Sub-Committee of the Food Regulation Standing Committee 2006)
- allowing businesses to employ third-party auditors to conduct audits. For example, DAWR trains and approves third-party Approved Auditors to carry out regulatory

audits of export establishments (DAWR 2016c). Some state authorities also approve third-party auditors, who may be authorised to conduct audits for both domestic and export purposes, such as in the dairy industry (box 9.8).

Box 9.8 Food safety audits in the dairy sector

Under Standard 4.2.4 of the Food Standards Code, dairy production, transport and processing businesses must control potential food safety hazards by implementing a documented food safety program. A food safety program is also required by state and territory dairy authorities as a condition of a dairy business' licence. Audits are required to ensure that a dairy business is complying with their food safety program, and that the food safety program remains adequate for the business' activities.

Dairy establishments that export products are also required to be registered with the Australian Government Department of Agriculture and Water Resources. For a dairy establishment to gain export registration, it must have an Approved Arrangement (AA), which is a documented food safety management system that describes how it manages food safety and traceability. Dairy export establishments are audited at least annually to ensure that they meet the requirements in their AAs and in export legislation.

The Australian, state and territory governments have worked together to reduce the burden of food safety audits on dairy businesses. Once a new AA has been approved by the Department of Agriculture and Water Resources, state and territory dairy authorities are responsible for ensuring that businesses continue to comply with it and conducting audits on behalf of the Australian Government. Dairy businesses can engage third-party approved auditors to conduct audits for domestic purposes, and Authorised Officers can be engaged to conduct audits for both domestic and export requirements. The Australian Dairy Farmers explained that:

> This enables a single regulatory audit system to be implemented to meet both domestic (state) and export requirements. This has also reduced overall dairy export certification costs and reduced the need for multiple audits. (sub. 63, p. 6)

The dairy industry supports these arrangements. Australian Dairy Farmers stated that 'it is important that this model is maintained' (sub. 63, p. 6). The Australian Dairy Industry Council Inc. and Dairy Australia went further, saying that 'this is a good system that needs to be actively promoted, and could be considered as a model for other industries' (Australian Dairy Industry Council and Dairy Australia 2014b, p. 36)

Sources: DAWR (2015c, 2015v, 2016j), DFSV (2016).

The ability for governments to reduce the burden of regulatory audits may be limited by importing country requirements. For example, establishments that prepare or store meat for export to the United States may only be audited by an auditor employed by DAWR (DAWR 2016c). Although these requirements cannot be directly controlled by the Australian Government, the Government can use its influence in trade negotiations and international trade fora to minimise duplication due to importing countries' audits (chapter 13).

The Commission has not identified any other areas where there is significant scope for Australian governments to further reduce the burden of regulatory audits. The South Australian Government said that 'food safety audits between Commonwealth Government

and State/Territory authorities could be streamlined further' (sub. 57, p. 29). The Commission is seeking information on whether and where there are opportunities to further reduce the burden of regulatory food safety audits.

INFORMATION REQUEST 9.3

The Commission is seeking information on whether there are opportunities to further reduce the burden of regulatory food safety audits while still achieving regulatory objectives, and if so, where these opportunities lie.

Commercial food safety audits

Commercial food audits can be required by supermarkets and other retailers to verify that suppliers have satisfied commercial food safety and quality assurance standards. A number of participants raised concerns about the burden imposed by commercial food audits, including that they were often more burdensome than regulatory audits. For example, Voice of Horticulture said that:

> One major fruit grower from Western Australia experiences 10 different audits each year and needs to employ a person 3 days a week to ensure all compliance policies are met. Most of the different audits are required by supermarkets. The audits are either related to employment, safety or product integrity and due to differing requirements from different buyers (supermarkets) cost the business approximately $150 000 per annum. (sub. 42, p. 25)

The AFGC and Australian Meat Industry Council also provided an example from the meat industry.

> One of the more extreme examples is a multi-species plant in Victoria with multiple market access listing receiving almost 200 days of audit per year not including the regulators audit and Department of Agriculture on-site veterinarian's verification activity. This processor actually employs additional staff just to deal with audits and their follow up. (AFGC, sub. 28, p. 18; AMIC, sub. 77, p. 9)

Producers can be required to undergo multiple commercial audits if customers require different standards to be met. Many of the large supermarkets and quick-service retailers, such as Coles and McDonalds, have bespoke company standards, and some customers use industry standards such as the British Retail Consortium Global Standard for Food Safety (Annison and Fleming 2015). The AFGC (sub. 28) noted that retailers use commercial audits to differentiate themselves in the marketplace, and that this explains the lack of mutual recognition between audits and the need to undergo multiple audits.

While multiple commercial audits can impose high costs on producers, these are not the result of government regulation. Government action would only be warranted if large retailers were unfairly using their market power to transfer the risks or costs of doing business to producers through audits. Competition issues are discussed in chapter 11.

Retailers should have the ability to use commercial audits to ensure safe, high-quality food where consumers demand this, and to protect or enhance their reputation. If the costs and number of commercial audits are unacceptable to producers, parties within the food industry should negotiate to achieve mutually acceptable outcomes. The food and horticulture industries are currently working together to reduce the number of commercial audits that horticultural producers face (box 9.9).

Box 9.9 The Harmonised Australian Retailer Producer Scheme

In 2012, Horticulture Innovation Australia Limited, at the request of the fresh produce industry, initiated a project to harmonise the food safety certification requirements of the major grocery retailers for the growing and packing of whole produce. This does not include the processing or value-adding of produce. The aim of the project was to reduce the time and cost to producers of complying with multiple quality assurance schemes when supplying multiple retailers.

The project has resulted in five major supermarket retailers — Aldi, Coles, Costco, Metcash (IGA) and Woolworths — working collaboratively to develop the Harmonised Australian Retailer Producer Scheme (HARPS). Under HARPS, producers of fresh horticultural produce supplying direct to one or more retailers will be required to be audited against 60 food safety elements, which have been harmonised from over 200 bespoke company elements, plus one of the following internationally recognised standards:

- the British Retail Consortium Global Standard for Food Safety, Issue 6
- the GlobalG.A.P. Integrated Farm Assurance Scheme, Version 5
- the Safe Quality Food Institute Code, 7th Edition Level 2
- Freshcare Food Safety and Quality Code of Practice (provisional pending benchmarking by the Global Food Safety Initiative, which is expected to be achieved by late 2017).

Implementation of HARPS will be managed by Kitchener Partners and PMA Australia-New Zealand Limited, beginning in late 2016. The HARPS project team has conservatively estimated the project to generate savings of $40 million per year.

Sources: Kitchener Partners (pers. comm., 5 May 2016); PMA A-NZ (pers. comm., 5 May 2016).

Is harmonisation or mutual recognition possible?

Harmonisation or mutual recognition of regulatory and commercial audits has the potential to decrease the number of audits that businesses must undergo, and reduce the cumulative burden of audits.

However, inquiry participants highlighted that harmonisation or mutual recognition would be difficult. The Western Australian Government (sub. 54) noted that numerous attempts have been made over the years by government and industry to harmonise regulatory and commercial food safety schemes or effect mutual recognition, and these have been without success due to the different purposes for the audits.

The South Australian Government also highlighted that many of the requirements of commercial audits are:

> … based on quality as well as food safety, and the food safety requirements do not always align with the Code and they are inconsistent between supermarket chains. (sub. 57, p. 28)

It suggested that if mutual recognition were to occur, the private sector should recognise audits conducted by food safety regulators, rather than the other way around. On the other hand, the Western Australian Government (sub. 54) noted that where private sector audits were in full compliance with regulatory food safety standards, mutual recognition by governments should be achievable.

Food regulation in the honey sector

Two participants — the Australian Honey Bee Industry Council (AHBIC, sub. 34) and Herta Klein (sub. 38) — raised concerns about food regulation in the honey sector, in particular with Standard 2.8.2 of the Food Standards Code (the honey standard) and its enforcement. The AHBIC pointed to inadequacies regarding the honey standard, noting that it:

> … has been lobbying for a new honey standard for Australia for several years now without success. The answer given by Food Standards Australia and New Zealand (FSANZ) is that this is a quality issue and not a food safety issue. (sub. 38, p. 4)

Herta Klein also said that:

> The honey standard as set out in the Australia New Zealand Food Standards Code … is too brief and requires updating. The fake honey discovered on sale in Victoria highlights the need for a standard that defines what honey is beyond simply stating the glucose and fructose levels, and moisture range (sub. 38, p. 4)

Herta Klein refers to an incident in 2014 involving Basfoods Australia, where products labelled 'Victoria Honey' were found to comprise mainly of sugars from plants, including corn and sugar cane. The ACCC issued three infringement notices on the grounds that it believed Basfoods' labelling and information on its website contained false or misleading representations. Basfoods admitted that its conduct contravened the ACL and paid penalties totalling $30 600 (ACCC 2014a).

AHBIC (sub. 34) submitted that prior to this, it had found products labelled as honey that were not honey but most likely corn syrup. It lodged a complaint with the Victorian Department of Health, which is the authority responsible for enforcing the honey standard in Victoria. The response that AHBIC received was that:

> … even though it was most likely in breach of 2.8.2, as it was not a health issue, they would not act. (sub. 34, p. 4)

Herta Klein (sub. 38) also claimed that labelling standards for honey are seldom enforced in Queensland. In the event of a food safety incident, the lack of labelling could mean that products cannot be traced, and Australia's export competitiveness could be jeopardised.

In order to encourage productivity and competitiveness in the food industry, it is important that governments enforce food standards where they are in place. There is also a need to review regulations periodically to ensure that they remain relevant. In the case of honey, relevant and enforced regulations will complement provisions in consumer law that prohibit false and misleading conduct. In addition, there is opportunity for the honey industry to develop a voluntary certification scheme to increase consumer confidence, and allow producers of high-quality honey to differentiate themselves in the marketplace.

10 Labour regulation

Key points

- Labour costs, flexible workplace arrangements and being able to access workers in rural and remote areas are important for the competitiveness of farm businesses. That said, many farm businesses are family-run and hire few ongoing workers.
- Some farm businesses (especially those in horticultural industries), rely on overseas temporary workers (backpackers and foreign workers temporarily in Australia) to fill gaps in the local workforce. The programs most frequently used by farm businesses include the *Temporary Work (Skilled)* (subclass 457), the *Working Holiday* (subclass 417), and *Work and Holiday* (subclass 462) visas and the *Seasonal Worker Programme* (visa subclass 416).
  - Many of the concerns raised about the temporary migrant programs were addressed by a recent *Independent review of the 457 programme* (the Azarias review). This review recommended: changes to reduce compliance costs (including streamlining the processing of sponsorship, nomination and visa applications); improvements to the assessment of labour market shortages; and the expansion of the Consolidated Sponsored Occupations List to include emerging skilled occupations.
- A number of participants raised concerns about the recently proposed changes to tax rates for backpackers, and compulsory superannuation requirements for temporary residents. The Government is currently reviewing taxation arrangements for working holiday makers. The review will also look at their superannuation arrangements and take into account other temporary residents' arrangements.
- Overtime and penalty rates can impose significant costs on farm businesses that employ workers outside ordinary hours and on weekends. The three-hour minimum shift for part-time and casual employees under the Pastoral Award and parts of the Horticulture Award were seen as inflexible, adding to farm business costs.
  - The Fair Work Commission is currently looking at these issues as part of its review of all modern awards. The Productivity Commission's Workplace Relations Framework inquiry recommended amendments to the modern awards objective that should assist the Fair Work Commission in its decisions.
- Agricultural work health and safety (WHS) risks are diverse, particularly as many farmers live and work on their property. Agriculture workers have amongst the highest rates of fatality and serious workers' compensation claims across industries. Areas of concerns include the complexity of WHS regulations, disproportionate penalties for non-compliance, and risks not being shared appropriately between employers and employees.
  - Regulators have taken steps to improve information dissemination to businesses, and have reviewed parts of WHS laws to reduce their regulatory burden.
  - WHS laws are due to be comprehensively reviewed by the end of 2017.

Labour costs, flexible workplace arrangements and being able to access workers (both high and low skilled) are important for the competitiveness of farm businesses. The National Farmers' Federation (NFF) said:

> Australian businesses face a distinct disadvantage in competing with international competitors when it comes to labour input costs … This is why flexible regulation and streamlined and efficient processes in place to manage workplace relations are so important in the Australian context to ensure that Australian agriculture is globally competitive. (sub. 61, p. 33)

Growcom also noted that its 'consultation with individual growers has consistently identified the red tape around labour as their number one issue' (sub. 43, p. 1).

Labour costs vary across agricultural industries (table 10.1). ABARES farm survey data show that labour directly employed by farmers (excluding contractors, such as those hired through labour hire companies) accounted for 3 to 6 per cent of an average broadacre or dairy farm's total costs in 2013-14. The share is higher (16 per cent) for vegetable growing farms which, like other horticultural farms, are typically more labour intensive.

Table 10.1 **Labour costs vary across agricultural industries**
2013-14

Farm type	*Hired labour* [a] *($)*	*Share of total cash costs* [b] *(%)*
Dairy	37 264	6.4
Vegetable growing [c]	116 200	16.3
Broadacre farms		
Livestock and crops	10 923	3.1
Sheep	7 753	4.2
Beef	10 507	5.3
Sheep and beef	9 536	4.9
Wheat and other crops	27 456	3.6

[a] Hired labour refers to wages paid to hired permanent and casual workers, but excludes contractors such as shearers and wool classers. [b] Cash costs exclude capital expenditures (such as depreciation) and household expenditures. [c] Preliminary data.

Sources: DAWR (2016d, 2016e); Mifsud and Valle (2015).

Labour costs also vary across individual farms, with many farms being family-run and hiring few ongoing workers. In June 2015, 71 per cent of farms employed no workers — excluding contractors — and just one per cent employed 20 or more workers (ABS 2016d).

However, farmers can be major employers of seasonal workers. Voice of Horticulture noted that '[i]n peak harvest periods some growers can have an additional 100 plus employees on the books at any one time' (sub. 42, p. 41). Some farmers rely on overseas workers to meet their seasonal labour demands, and aspects of Australia's migration system facilitate this.

Farmers also often use contractors to meet their labour demands or to carry out specific activities, such as shearing (which farmers have done since the 19th century (Davidson 1981)).

This chapter looks at: the distinctive features of labour markets and why governments intervene (section 10.1); access to overseas workers and taxation and superannuation payments for temporary overseas workers (section 10.2); workplace relations concerns, including overtime and penalty rates, and the prescribed minimum length of shifts (section 10.3); and work health and safety (section 10.4).

10.1 Distinctive features of labour markets

Labour markets have distinctive features that differentiate them from other competitive markets (box 10.1) and governments intervene in several ways, including by providing:

- a workplace relations framework to govern the way that employers and employees negotiate to set wages and conditions. Australia's workplace relations framework aims to address imbalances in bargaining power to ensure that parties can achieve outcomes that are fair (PC 2015f)
- migration and visa programs — addressing labour market objectives has become a prominent motivation for accepting immigrants from many countries (PC 2015d) (although migration and visa programs also address a range of other economic and social objectives). Migration, and particularly temporary migration, can help meet labour shortages in a timely fashion
- work health and safety regulations. These aim to protect the health and safety of people engaged in work or employment. While in many cases employers and employees recognise the importance of health and safety at work, they may face insufficient incentives to prevent injury or disease, or have insufficient knowledge of how to manage workplace risks (PC 2004b).

Box 10.1 Characteristics of labour markets

Although no market completely aligns with the model of a perfectly competitive market, labour markets can be more imperfect than others due to the following features.

- *Information asymmetries:* Jobseekers may find it difficult to know the extent of competition for a job, levels of remuneration and conditions for a comparable employment opportunity, and the non-wage conditions of a new workplace (such as workplace morale or the behaviour of managers). For employers, it may be similarly difficult to evaluate a potential employee's skills or personal attributes, and other opportunities or offers the employee is considering.
- *Search costs:* Job searching is costly, as is recruitment. It is also an uncertain process — parties usually make and receive offers in a sequential fashion, and so must consider the likelihood of receiving a better offer or applicant in the future.
- *Impediments to individuals freely entering and exiting the labour market:* Many people do not have sources of non-labour income or savings to support themselves if they do not work. Even where safety nets such as unemployment benefits are available, the personal and social costs of unemployment mean that many people may not see exiting unsatisfactory employment as a viable alternative.
- *Barriers that limit the mobility of labour between segments of the labour market:* Factors such as age, family circumstances, education, life events, dual-income households, housing, employment factors and local infrastructure can be significant determinants of an individual's labour mobility. These factors mean that labour may be less mobile than other production inputs (for example, raw materials or machinery).
- *Employers that wield substantial purchasing power in the labour market (monopsonies):* While 'one company towns' (the traditional example of a monopsony) are generally considered a relic of the past, monopsonies still persist in some sectors. These include government-provided services such as health, education, policing and defence, or where the skills required by firms are sufficiently differentiated (sometimes referred to as monopsonistic competition).

Sources: PC (2014b, 2015f).

10.2 Access to overseas workers

Farm businesses often hire overseas temporary workers (seasonal workers from the Pacific Islands, backpackers on holidays and foreign workers temporarily in Australia) to fill gaps in the local workforce which arise from the seasonal labour needs of the sector and a lack of suitably skilled or trained staff.[33]

[33] Some participants to the Commission's Migrant Intake into Australia inquiry argued that temporary migrants, particularly working holiday makers, crowd out domestic workers from the labour market (PC 2015d). However, the available evidence at the aggregate level suggests agricultural businesses and those in regional areas rely on temporary migrants to fill labour gaps.

The importance of access to overseas labour was noted by a number of participants to this inquiry. The NFF, for example, said that:

> Migration programs provide an essential source of labour for many Australian farmers. The seasonal nature of agriculture, and its location in rural and remote areas of Australia, often makes it difficult to attract and retain Australian workers. (sub. 61, p. 38)

The West Australian Pork Producers Association noted that piggeries employ overseas workers because:

> … the inability to obtain skilled employees for piggeries is identified as a significant risk to the viability of pork producing operations and a threat to the industry's ability to meet local and international demand through expansion of operations. (sub. 24, p. 7)

Access to overseas workers is also important for agribusinesses. The Australian Food and Grocery Council noted that:

> Improved access to overseas workers where suitably qualified staff, or an insufficient number of locals, are not available is critical to the competitiveness of the agribusiness, food and grocery manufacturing sector in Australia. (sub. 28, p. 9)

Temporary migration programs used most frequently by the agriculture sector (box 10.2) are:

- the *Temporary Work (Skilled)* (subclass 457) visa
- the *Working Holiday* (subclass 417) visa and *Work and Holiday* (subclass 462) visa
- the *Seasonal Worker Programme* (visa subclass 416) (NFF 2015b).

Data on the number of migrants in these programs show that:

- at least 2200 subclass 457 visa holders were employed in the Agriculture, Forestry and Fishing industry at June 2015, with almost 900 new subclass 457 visa holders sponsored in 2014-15 (DIBP 2015b)[34]
- at least 38 000 working holiday makers (DIBP 2015c) worked in the Agriculture, Forestry and Fishing industry at some point in in 2014-15[35]
- the Government initially allocated 2600 Seasonal Worker places in 2014–2015 to the horticulture sector (the main agricultural industry to use the program) (DoE 2015a). In June 2015, the Government removed annual limits on the number of seasonal workers that can participate (Bishop and Robb 2015). The Government also announced in February 2016 that it will expand the Seasonal Worker Programme to include other agricultural industries including cattle, sheep, grain and mixed enterprises (Cash and Joyce 2016).

While representatives of farm businesses noted the importance of accessing overseas workers to address skill shortages in the agriculture sector, they also drew attention to

[34] Data include primary subclass 457 visa applicants only.

[35] Based on the number of 417 visa holders that were granted a second working holiday visa by working at least 3 months in the Agriculture, Forestry and Fishing industry.

compliance costs and features of the temporary migrant programs that, in their view, limit their access to overseas workers.

Box 10.2 About the temporary migration programs

The *Temporary Work (Skilled)* visa (subclass 457) allows skilled workers to come to Australia and work for an approved business for up to four years. A business can sponsor someone for this visa if they cannot find an Australian citizen or permanent resident to do the skilled work. Visa holders must also have a satisfactory level of English-language proficiency (with some exceptions) and generally must work in a skilled occupation on the Consolidated Sponsored Occupations List.

An exception to the latter requirement is available through a labour agreement, which allows an employer to negotiate with the Australian Government to recruit workers for occupations that are not on the Consolidated Sponsored Occupations List. In negotiating these agreements, the employer must identify the relevant skill shortage and demonstrate why Australian workers cannot fill these jobs.

The *Working Holiday Maker* program allows young adults (aged 18 to 30) from eligible partner countries to work in Australia for one year while having an extended holiday. Work in Australia must not be the main purpose of the visa holder's visit. The *Working Holiday Maker* program includes the *Working Holiday* (subclass 417) and *Work and Holiday* (subclass 462) visas. Working holiday makers can generally work with one employer for at most six months but, as of late 2015, those working in particular industries in Northern Australia, including agriculture, can ask to stay at their job for up to six months more. Migrants on a Working Holiday (subclass 417) visa can apply for a second working holiday visa for another year if they work for at least three months in agriculture, fishing, mining or construction in regional Australia.

The *Seasonal Worker Programme* (Special Program visa subclass 416) provides approved employers with access to seasonal workers from participating countries (including Fiji, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, East Timor, Tonga, Tuvalu and Vanuatu). These workers can stay in Australia, generally for up to seven months in any 12 month period. Seasonal workers may return in following seasons, providing employers with access to a returning, reliable and productive workforce.

Intergovernmental memoranda of understanding were signed by the Australian Government and the governments of these participating countries to enable the citizens who are residents of these countries to participate in the programme.

Sources: Department of Immigration and Border Protection (2016c, 2016d, 2016g, 2016h, 2016i).

Reforms to reduce compliance costs

Some farm businesses (for example, the West Australian Pork Producers Association (sub. 24) and a Queensland cotton farm, box 10.3) spoke about the large amount of time that they spent dealing with administration related to employing temporary migrant workers, particularly those on subclass 457 visas. They also mentioned the difficulties they face trying to navigate the system.

Box 10.3 Employing foreign workers — some experiences relayed

An office manager of a large cotton farming business in southern Queensland recently set out to complete a nomination form to allow the business to employ a foreign worker whose skills could not be matched locally.

The manager told the Commission that she was unable to find the correct forms on the Department of Immigration and Border Protection's website, so she phoned the department's helpline. The manager reported waiting an hour and a half before speaking to someone (but was told that she had reached the wrong office). The manager was then transferred to the correct office. The call was answered after about 30 minutes of waiting on hold.

The manager reported that when she spoke to the correct office, she was given helpful advice about how to set up an account and access the correct forms. However, the manager found the form to be confusing and had difficulty working out which subclass of visa applied to the worker that she planned to employ. The manager again phoned the helpline, and said that she was put on hold for one hour. After being advised about which subclass of visa to apply for, the manager reported that the form took one and a half hours to fill in.

On submitting the form, the office manager received a confirmation email that asked for a series of complementary forms to be submitted in support of the visa application. She noted that it was unclear which forms were required or where to get them from, so she called the helpline again and waited about an hour on hold. Once the call was answered she was directed to the webpage with the required forms.

At the time the Commission spoke to the office manager, the application was not complete. The supporting documentation required input from the business' Chief Financial Officer to make a case for why no Australian worker was more suitable for the role. The reason for nominating the foreign worker was a lack of local candidates for the position.

The Western Australian Pork Producers Association made similar observations:

> Whilst the assistance from individual officers within the Department of Immigration and Border Protection (DIBP) is a high standard, the extent to which they can help is hampered by caution about providing advice as opposed to information. … the system itself is, at times, interpreted in an overly prescriptive manner … The DIBP website is also difficult to navigate and accessing meaningful information is not easy. It is noted that DIBP is currently running a survey seeking feedback on making the site easier to use. (sub. 24, p. 7)

Source: Productivity Commission case study interview (appendix C).

There have been a number of recent reforms aimed at reducing the compliance costs of Temporary Work (Skilled) (subclass 457) visas. In October 2014, the Government in its *Industry Innovation and Competitiveness Agenda* proposed that it would streamline the subclass 457 program so as to reduce the time and cost to business of getting subclass 457 workers into Australia (Australian Government 2014b).

An *Independent Review into Integrity in the Subclass 457 Programme* (Azarias review) (Azarias et al. 2014) was also recently conducted. The report was released in September 2014, and in March 2015 the Australian Government announced it would reform the subclass 457 visa program in line with the majority of the report's recommendations (DIBP 2015a, 2016a). The recommendations included streamlining the processing of sponsorship, nomination and visa applications based on certain risk factors. There should

also be scope for Department of Immigration and Border Protection (DIBP) to make the system easier to navigate and improve support services to reduce the burden on employers looking to hire foreign workers.

Calls to expand the Consolidated Sponsored Occupations List

Another key area of concern for inquiry participants was the Consolidated Sponsored Occupations List (CSOL) which is used to determine eligibility for the subclass 457 program.

The NFF stated that many skilled agricultural occupations are not on the CSOL and this means farm businesses are spending years negotiating labour agreements to access overseas workers.

> The ability of farm businesses to fill skilled labour shortages with the use of overseas workers on the 457 visa program is limited by its reliance on the ANZSCO [Australian and New Zealand Standard Classification of Occupations] coding system, which was never intended to define current industry skills needs exhaustively. Many skilled agricultural occupations are simply not on the Consolidated Skilled Occupations List (CSOL) which [is] used to determine eligibility for [subclass] 457 visas. As a result, agricultural industries have dedicated years negotiating labour agreements to access workers they desperately need. (sub. 61, p. 38)

Australian Dairy Farmers (ADF) (sub. 63) reported that the dairy industry and the DIBP negotiated an industry-wide labour agreement in response to a need to fill senior farmhand roles on farms.[36] A labour agreement was sought because the current CSOL did not acknowledge senior farmhands so it was not possible to recruit people of this skill level on subclass 457 visas. ADF claimed that:

> The need for suitably skilled and experienced employees is only going to grow as farms aggregate and more senior roles become available. Current immigration requirements hampering these efforts, such as unaligned ANZSCO codes and visa limitations are imposing significant barriers for the employment of overseas labour. ADF sees a number of inconsistencies in ANZSCO definitions and current practice, such as definitions used in the Pastoral Award 2010, and for a number of occupations that have their skill levels classified too low to enable employers access to the 457 visa scheme. (sub. 63, p. 10)

Skilled occupations on the CSOL are those included in skill levels 1, 2 and 3 of the ANZSCO list published by the Australian Bureau of Statistics (PC 2015d). The Azarias review (2014) recognised the imperfect nature of the translation of the ANZSCO occupation list into the CSOL and recommended changes to accommodate the inclusion of emerging skilled occupations on the CSOL (box 10.4). This should make the process for updating CSOL more responsive.

[36] West Australian Pork Producers Association (sub. 24) and Australian Pork Limited (sub. 37) also noted that pork producers have used labour agreements to meet their labour demands.

However, the review recommended that the CSOL remains a list of occupations that are ANZSCO skill level 3 or above and that semi-skilled occupations be addressed through the labour agreement system.

Box 10.4 Azarias review's recommendations — CSOL and identifying genuine labour shortages

Recommendation 1.1: That, in lieu of the existing Ministerial Advisory Council on Skilled Migration, a new tripartite ministerial advisory council, which is not necessarily prescribed in legislation, be established to report to government on skilled migration issues.

Recommendation 1.2: That the new ministerial advisory council be supported by a dedicated labour market analysis resource.

Recommendation 3.1: That the Consolidated Sponsored Occupations List (CSOL) be retained as a list of occupations which are at Skill Level 3 and above, and that the CSOL should be able to be amended by two means: first, the addition of skilled occupations which can be shown to exist in the community but which may not be on the Australian and New Zealand Standard Classification of Occupations (ANZSCO) list; and, second, the refinement of the CSOL in cases where there may be integrity or appropriateness concerns. Any occupations not on the list, which are usually referred to as semi-skilled, may be addressed as part of the Labour Agreement regime.

Recommendation 3.2: That the new ministerial advisory council provide advice on those occupations where some concerns exist and recommend additional requirements or limitations on occupations and/or regions.

Source: Azarias et al. (2014).

The Australian Government supported, or supported in principle, these recommendations from the review (DIBP 2015a), and reinstated the Ministerial Advisory Council on Skilled Migration in mid-2015 (DoF 2016a). One of the Council's tasks is to review the effectiveness of the CSOL to ensure that the composition of the list better aligns to the needs of industry. The Council is currently undertaking this task and will report to Government over the coming months.

The Commission's draft report for the Migrant Intake into Australia inquiry supported these recommendations from the Azarias review, as they should increase flexibility within the CSOL (PC 2015d).

Labour market testing — a further area of concern

Labour market testing was another area of contention. Employers looking to access subclass 457 visa holders must first test the local labour market to ensure that there is no suitable Australian citizen, permanent resident, or eligible temporary visa holder readily available to fill that position (DIBP 2016f).

A number of participants claimed that labour market testing is unnecessary and therefore places an unnecessary cost on businesses. The NFF (sub. 61), for example, said that labour market shortages are nothing new in the agriculture sector, but the labour market testing regime does not acknowledge existing shortages, and applies across the board to all sectors and industries seeking to access overseas worker (under both the subclass 457 visa program and the Seasonal Worker Program).

The NFF also noted problems with the requirement to advertise and offer work to Australian jobseekers before recruiting overseas workers:

> Farmers are required to advertise jobs broadly, eliciting numerous responses from foreign workers and only very few from Australian workers. Each job application must be reviewed and responded to, requiring allocation of significant time and resources, when the reality is that most Australians are not looking for jobs that involve hard, physical work in rural, regional and remote areas. In some cases, our members tell us that Australian workers who have applied and been offered a job have refused the offer, advising the application was only made to meet their job application quota for the month. (sub. 61, p. 39)

Stakeholders (NFF, sub. 61; GrainGrowers, sub. 73) called to remove labour market testing requirements in regions and/or industries where there is a demonstrated labour shortage (for example, regions eligible for the Seasonal Worker Program).

On labour market testing, the Azarias review said:

> On the evidence presented to us we have concluded that the labour market testing provisions introduced in 2013 are easily circumvented and do not prevent employers from engaging overseas workers in place of Australians. In addition, recruitment practices are highly diverse across occupations and industries: to design a system that encompasses this diversity is impractical. (Azarias et al. 2014, p. 45)

While the Azarias review recommended that labour market testing be abolished, this recommendation was 'noted' (rather than 'supported', 'supported in principle' or 'not supported') by the Australian Government (DIBP 2015a).

The Commission's Migrant Intake into Australia draft report concluded that 'despite the shortcomings in the current labour market testing arrangements identified in the Azarias report, the Commission considers the Government's approach of retaining labour market testing is sensible for the moment' (PC 2015d, p. 313). However, the Commission recommended that 'the Australian Government assess the effectiveness of changes implemented as a result of the recommendations made by the Azarias Review after sufficient time has passed for those changes to take effect' (PC 2015d, p. 314).[37]

[37] The Commission's final report of the Migrant Intake into Australia inquiry was provided to the Government on 15 April 2016. The Australian Government is required to table the report in each House of Parliament within 25 sitting days.

Tax rates for 'backpackers'

In the 2015-16 Federal Budget, the Australian Government announced plans to change the tax status of most temporary working holiday makers, from that of resident, to that of non-resident from 1 July 2016 (Treasury 2015a). These proposed changes raised some concerns, with some participants suggesting that taxing backpackers at a higher rate (by treating them as non-residents), would act as a disincentive for backpackers to work in Australia (who will choose more lowly taxed countries).[38] For example, West Australian Pork Producers Association said:

> Pork producers use itinerant labour from time to time. Currently people on working holiday visas who are here for more than six months pay no tax until they reach the $18 000 threshold. A change to be implemented from July 1 will mean these workers will pay 32.5 cents in tax for every dollar of income up to $80,000. This is a strong disincentive for backpackers to work in the regions undertaking work that is difficult to satisfy with local labour. A compromise should be found to address this issue. (sub. 24, p. 7)

The Chair of the NFF Workforce Productivity Committee also said that:

> Taxing backpackers at a rate of 32.5 per cent will make work in Australian agriculture a highly unprofitable proposition … Furthermore, it will lead to reduced agricultural productivity and will strip regional communities and businesses of much needed tourism spending … Already we are seeing signs that the proposed tax rate of 32.5 per cent is scaring working holiday makers away from Australia. In nations like Canada and New Zealand, they are just as likely to be able to find farm work that attracts substantially lower amounts of taxation … Any further decline will only exacerbate the current trend of 12 per cent fewer backpacker arrivals to Australia each year. (NFF 2016b)

The Australian Government has since delayed implementing the changes pending outcomes from an interdepartmental review (O'Dwyer 2016). The review was initiated following concerns raised about the impact of what has become known as the 'backpacker tax' (NFF 2016b) on the competitiveness of industries such as agriculture and tourism (O'Dwyer 2016).

Under the current arrangements, people temporarily in Australia for a working holiday can access resident tax treatment (typically if they are visiting Australia for more than six months), including the tax-free threshold, the low income tax offset and the lower tax rate of 19 per cent for income above the tax free threshold up to $37 000 (ATO 2015c, 2016e; Treasury 2015a).[39] This is in line with tax arrangements in the United Kingdom, Canada and New Zealand, which generally treat working holiday makers as residents (Canada

[38] In principle, a potential working holiday maker will choose the country with the highest after-tax wage adjusted for the cost of living, while also taking into account their preferences to live and work in the various countries.

[39] Currently, a person visiting Australia for more than six months that lives at the same place for most of that time, and either has or establishes ties in the local community is an Australian resident for tax purposes. However, a person visiting Australia for more than six months who is travelling and working in various locations around Australia for most of that time is a foreign resident for tax purposes (ATO 2016e).

Revenue Agency 2016; Inland Revenue 2015; UK Government 2016). Under the proposed change, working holiday makers will be taxed at 32.5 per cent from their first dollar of income.

One horticulture grower noted 'that the tax paid by working holiday makers on a standard 38-hour week would increase [under the proposed change] from $109 to $256 and that while this might be acceptable working in a café on the Cairns Esplanade, labourers picking fruit at 40^0 C in Katherine or Mareeba will not bear the change' (Voice of Horticulture, sub. 42, p. 40).

While more a taxation issue than a regulatory one (and therefore outside the scope of this inquiry), the merit of the proposed changes to the tax rates depends on several factors. These include backpackers' decisions to come to Australia and work, the effects of the changes on industry and the wider community, and how these effects are balanced against the objective of the working holiday scheme — which is mainly to foster closer ties and cultural exchange between Australia and partner countries (DIBP 2015c).

The Australian Government's review of taxation arrangements for working holiday makers (visa subclasses 417 and 462) will also cover other aspects affecting backpacker labour, such as their superannuation arrangements, wages and entitlements, and the regulatory imposts on businesses (O'Dwyer 2016). The review should also consider the role that working holiday makers play in filling labour gaps within the agricultural industry.

Superannuation payments for temporary residents

A number of concerns were raised about paying superannuation guarantee contributions, particularly in relation to foreign workers with temporary residency. Under the guarantee, an employer generally must contribute at least 9.5 per cent of an employee's before-tax income to the employee's superannuation fund when they earn $450 or more in a month, regardless of their residency status (ATO 2015f).

Voice of Horticulture (sub. 42) questioned the need for superannuation payments for working holiday makers who, like overseas workers temporarily in Australia, can claim it when they depart Australia (the departing Australia superannuation payment) (ATO 2015e). Commenting on superannuation contributions for temporary overseas workers in their submission to the Commission's inquiry on Migrant Intake into Australia, the NFF said:

> … this policy measure is worth reconsidering at the right time, given the underlying purposes of superannuation to provide an adequate level of retirement income, relieve pressure on the Age Pension and increase national savings. Each of these objectives can be achieved without the need to extend the benefit to temporary, overseas workers. (2015b, p. 14)

Superannuation for temporary residents does not align with objectives

Paying superannuation to temporary residents does not appear to be in line with the objectives of superannuation. A Charter Group established by the Australian Government in 2013 assessed the core high-level objectives of the superannuation system are to:

- provide an adequate level of retirement income
- relieve pressure on the Age Pension; and
- increase national savings, creating a pool of patient capital to be invested as decided by fiduciary trustees. (Cooper et al. 2013, p. 29)

These objectives relate to Australians' superannuation, taxation and pension. Consistent with this, temporary residents are able to claim their accumulated superannuation contributions when they leave Australia. This suggests that requiring temporary foreign workers to have superannuation accounts, and Australian employers to make contributions and to administer these arrangements is an unnecessary regulatory burden.

Superannuation collected from temporary residents is a source of revenue for government, as temporary workers' superannuation contributions are taxed at 15 per cent and then again at 38 per cent when they are claimed (ATO 2015d, 2016a).[40]

Removing the requirement for employers to contribute superannuation for temporary residents, however, would mean that temporary residents would be less expensive to employ than domestic workers, and this is likely to bias employers' decisions about who to employ.

One option is to change the taxation arrangements for temporary residents. For example, the government could impose an income tax rate on foreign workers that captures their superannuation, while ensuring the costs of employing temporary residents and domestic workers remain the same for employers. Another option is to allow temporary residents to be paid their superannuation guarantee with their take-home wage.

However, options such as changing taxation rates on temporary residents or paying their superannuation with their take-home wage, need to be carefully examined as they raise broader questions about the taxation and superannuation systems and have the potential to affect the demand for and supply of temporary migrant labour in Australia. These broader issues are beyond the scope of this inquiry and have not been examined in any detail. However, the current arrangements should be considered in the review of working holiday maker taxation arrangements (see below).

[40] Before-tax employer and salary sacrifice contributions to superannuation and investment returns on superannuation are all taxed at 38 per cent when a temporary resident claims their superannuation upon leaving Australia. Any post-tax contributions made by the temporary residents are not taxed when they leave (ATO 2015d)

Reducing compliance costs from administering superannuation

Voice of Horticulture (sub. 42) and Cotton Australia (sub. 23) noted the disproportionately high compliance costs associated with making small superannuation contributions, mainly for workers (both domestic and temporary residents) that are employed for a short period, such as during harvesting.

An option that was previously recommended by the Regulation Taskforce (2006) and the Commission's *Annual Review of Regulatory Burdens on Business: Primary Sector* (PC 2007) is to increase the minimum income threshold ($450 per month) after which employers must start paying superannuation.

The current threshold has not changed since it was introduced in 1992 (PC 2007) and is set at the tax-free income threshold at the time.[41] Over the same period, the minimum wage has doubled.[42] This means an employer in 1992 was required to pay superannuation to a minimum wage worker after they worked 53 hours in a month. Today, an employer must pay superannuation after an employee has worked 25 hours per month (or less than 7 hours a week).

Increasing the threshold would reduce employers' labour costs but also reduce the retirement savings of employees earning below the threshold (unless offset by a corresponding increase to workers' base pay equal to the fall in superannuation). The Government noted the fall in retirement savings when it rejected the Regulation Taskforce's recommendation to increase the threshold to $800 per month (or $9600 per year) to be in line with the growth in average wages since 1992 (Australian Government 2006; Regulation Taskforce 2006).

The Commission's previous regulatory review of the primary sector agreed with a higher threshold but did not specify a level, and suggested that it be increased through an appropriate process and that Treasury periodically review it (PC 2007). At the time, the Commission judged the benefit to businesses from lower compliance costs would likely offset any negative impact on workers' retirement savings, and will take into account regulatory creep caused by wage inflation.

There are also other solutions for reducing business compliance costs without broader economic effects. The Australian Taxation Office's Small Business Superannuation Clearing House, for example, allows small businesses to combine their superannuation guarantee contributions into one electronic payment to the clearing house, which then distributes the payment to employees' superannuation accounts (ATO 2016d).

41 The tax-free threshold was $5400 per year in 1992 (ATO 2015b).

42 The minimum wage in 1992 is based on the full-time wage in the Metal Workers Award which was $325.40 (Bray 2013). The national minimum wage at July 2016 was $672.70 (FWO 2015). A full-time work week consists of 38 ordinary hours.

More generally, the tax rates on superannuation contributions are higher than income tax rates for those on low-incomes, with the current tax free income threshold at $18 200 (ATO 2015c). An employee earning $15 000 before tax (excluding superannuation) in a year would avoid taxes of about $210 on their superannuation contribution if, for example, they receive their superannuation with their take-home wages, rather than into a superannuation fund.

Superannuation for overseas temporary workers needs reviewing

As noted, the Government is currently looking at the superannuation arrangements for working holiday makers as part of its broader review of their taxation arrangements. This review should consider businesses' compliance cost of the current superannuation arrangements for temporary migrant workers, working holiday makers' decisions to work, employers' hiring decisions and any effects on other types of workers.

Other issues

Training requirements under the subclass 457 visa program

Sponsors of subclass 457 visa holders that have been operating in Australia for at least 12 months are required to pay at least 2 per cent of their payroll annually into an industry training fund, or spend at least 1 per cent of their payroll on training existing employees (*Migration Regulations 1994 — Specification of Training Benchmarks and Training Requirements* (Cwlth)).[43] Australian Pork Limited said the training requirements are considered:

> … onerous and inflexible by industry and inhibit an employers' ability to effectively train migrant workers who are yet to qualify for permanent residency status. (sub. 37, p. 3)

Subclass 457 visa holders and the training requirements of sponsors can play a conflicting role on domestic workers' skill development. Migrant workers can promote domestic workers' skill development by helping to train them. But ready access to temporary skilled migrant labour can reduce employers' incentives to hire and train domestic workers. In addition, the absence of skills shortages reduces upward pressure on wages for skilled workers, which can reduce domestic workers' incentive to acquire skills.

Training requirements can be justified when domestic workers' skill development is hampered by temporary skilled migration. Domestic workers with limited skills are more likely to struggle to find and keep jobs, which can also have broader impacts on the Australian community. Employers do not account for these costs to the community when they decide whether to hire temporary skilled migrants, and training requirements can correct for this.

[43] Sponsors operating in Australia for less than 12 months must have an auditable plan to meet the training requirements (DIBP 2016d).

A number of inquiries have concluded that training requirements on employers should remain. The Azarias review (2014) noted that there was strong stakeholder support in principle for training requirements. However, stakeholders to that review, as well as those to the Senate Education and Employment References Committee's (SEERC's) inquiry into migrant exploitation (SEERC 2016), highlighted problems with the specific requirements currently in place. SEERC said that 'the evidence to the inquiry makes it clear that the current training requirements are ineffective and in need of complete overhaul' (SEERC 2016, p. 138). Some problems flagged were that an employer of one subclass 457 visa holder must meet the same training requirement as an employer of many subclass 457 visa holders, and the training funds are not necessarily allocated to remedying specific skills shortages.

Azarias et al. (2014) recommended replacing the current training requirements with an annual training fund contribution, with the contribution scaled according to business size. It suggested the contribution could be $400 per visa holder per year, with higher contributions in the first year for larger businesses. SEERC supported this, but recommended a higher contribution of $4000 per visa holder, to be in line with the incentive payment that employers receive for engaging an apprentice. SEERC also recommended that:

- sponsors be required to hire an Australian tertiary graduate in their enterprise for each professional subclass 457 visa holder that they take on
- sponsors hiring subclass 457 workers for trade professions must demonstrate that 25 per cent of their trade workforce are apprentices when their total workforce consists of four or more tradespersons.

The Government supported the Azarias recommendations subject to further consultation (DIBP 2015a). It has not yet responded to SEERC's report.

The Government should carefully examine all options taking into account the broader costs to the community. The incentive payment currently given to employers of apprentices is not necessarily a good benchmark for the requirement, as it is designed to encourage employers to take on apprentices by offsetting some of their training costs, rather than reflecting the broader costs on the community.

Also, the proposed requirements on employers can significantly increase employers' hiring costs. This is likely to deter many employers from hiring temporary skilled migrants, and not all of these employers will hire domestic workers instead, particularly those that need skilled labour immediately and for a short period.

Checking migrants' visas

The DIBP requires employers to take reasonable steps to ensure that their workers are legally able to work in Australia (DIBP 2016b). This requirement helps avoid instances

where migrants work without a valid visa or an entitlement to work, which could undermine Australia's migration objectives and labour market conditions.

- Migration policies balance the effect of migration (both positive and negative) on the community, including in the labour market. Migrants that work in breach of their visa conditions can weaken the effectiveness of these policies.
- Unscrupulous employers may seek out migrants without proper work entitlements. These migrants can be more willing to accept wages that are below the minimum wage as they struggle to compete with legal workers at higher wages.[44] This is more likely to displace domestic workers from the labour market.

Migrants that work in breach of their visa are particularly susceptible to exploitation by employers (PC 2015f).[45] These migrants can face large penalties such as deportation for breaching their visa conditions, and as a result may be less willing to report exploitation.

The Voice of Horticulture said that the:

> … the imposition of visa checking responsibilities is another concern for growers. Farmers are required to check visa entitlements within 48 hours of an employee commencing work to avoid penalties … during harvest time when up to 300 new casual labour is on site the administrative burden can be immense. (sub. 42, p. 41).

The DIBP previously specified that employers that did not have immediate access to the internet or fax had 48 hours to check a job applicants' work entitlements (DIAC 2009). But the DIBP (2016b) currently does not specify a grace period for when a farmer must check an employee's work entitlement but expects 'employers to take reasonable steps, at reasonable times, to confirm that non-citizen is allowed to work' and prefers employers to check a worker's visa details using the Department's Visa Entitlement Verification Online service (VEVO). The DIBP recommends that employers conduct checks before a migrant commences work.

Limited information is available to assess whether checking migrants' work entitlements is burdensome on businesses, but VEVO does provide a fast response (acknowledged by Voice of Horticulture (sub. 42)), so the compliance burden per worker appears low (DIBP 2016e).

There can be other barriers to accessing VEVO such as inadequate internet access (chapter 6); and other aspects of the checking process may be time-consuming, such as

---

44 Employers can face large penalties and criminal offences for employing workers that do not have proper work entitlements under the Migration Act 1958 (DIBP 2016b) so are not likely to knowingly employ these migrants at the minimum wage or higher when they can employ a legal worker instead.

45 Characteristics of migrants such as their limited English language skills, limited knowledge of workplace rights and conditions, and dependence on their employer for their visa, make them more likely to accept substandard wages and conditions (PC 2015f).

collecting workers' visa details.[46] These barriers can delay an employer from checking the work entitlements of all their temporary migrant employees before they commence work. However, employers can avoid penalties as long as they can show that, given the circumstances, they have taken reasonable steps towards confirming that a migrant can work legally.

The Commission notes that there are benefits from the employer visa checks in limiting the prevalence of illegal work, which can help reduce instances of migrant exploitation. The DIBP should continue to examine ways to improve the ease and speed of access to visa checks by employers, and ensure that businesses clearly understand their responsibilities.

Labour hire companies

Farmers often use labour hire companies to source labour, particularly during harvest time, and there have been a few high profile examples of these companies underpaying and more generally exploiting migrant workers. One example involved the labour hire companies contracted by Baiada. The Fair Work Ombudsman's inquiry into Baiada's labour procurements found:

> … exploitation of a labour pool that is comprised predominantly of overseas workers in Australia on 417 working holiday visas, involving: significant underpayments; extremely long hours of work; high rents for overcrowded and unsafe worker accommodation; discrimination and misclassification of employees as contractors. (2015, p. 3)

Case study participants to this inquiry expressed some concerns about the practices of labour hire companies. Also, these labour hire companies can be difficult to pursue as they may avoid paying unpaid wages by declaring insolvency and then rebirthing their operations elsewhere (known as 'phoenixing') (appendix C). Some labour hire companies also directly source workers from their country of origin, which weakens regulators' education and enforcement activities (SEERC 2016).

Instances of exploitation have resulted in several reviews into the labour hire industry, including by the Victorian and South Australian Governments (Parliament of South Australia Economic and Finance Committee 2015; VDEDJTR 2016b). Labour hire was also looked into by the SEERC's inquiry into migrant exploitation (2016). While the states' reviews are yet to report, the SEERC (2016, p. 328) recommended 'that a licensing regime for labour hire contractors be established with a requirement that a business can only use a licensed labour hire contractor to procure labour.'

Voice of Horticulture (sub. 42, p. 43) warned that 'imposing red tape obligations on growers is not the answer' to improving oversight of labour hire firms. The Commission agrees that any regulations on labour hire companies should not place an unnecessary

[46] Readers can comment on their access to internet services by making a submission to the Commission's inquiry into the Telecommunications Universal Service Obligation. Details are on the Commission's website: http://www.pc.gov.au/inquiries/current/telecommunications.

burden on businesses (or on labour hire companies). However, the costs of regulation need to be balanced against the need to tackle exploitation.

The Commission has not assessed the merits of the SEERC's recommendation for licensing, but in the Commission's Business Set-up, Transfer and Closure inquiry, it recommended tracking company directors through a Director Identity Number and requiring additional details about them to help regulators pursue exploitative employers who may try to avoid paying unpaid wages by liquidating their company (recommendation 15.6) (PC 2015b). In addition, adopting other recommendations from the Business Set-up, Transfer and Closure inquiry will facilitate hiring workers which could reduce farmers' reliance on labour hire companies.

10.3 Workplace relations

Australia's workplace relations framework comprises a complex array of labour laws, regulations and institutions, and specifies the minimum wages and conditions that businesses must provide their employees.

Wages and conditions in the pastoral and agricultural sectors have evolved from the 19th century. The foundations of the minimum wage are based on the 1907 Harvester Case brought forward by a manufacturer of harvesters (box 10.5).

Box 10.5 Some notable industrial decisions in agriculture

Harvester Case establishes the minimum wage

In a case brought forward by Hugh Victor McKay to the Arbitration Court in 1907, Justice Higgins (President of the Arbitration Court) decided a 'fair and reasonable' wage to be 7 shillings a day which he deemed would allow an unskilled labourer to support a wife and three children.[47] Mckay owned Sunshine Harvester Works which built stripper harvesters. The Harvester Case became the basis for the national minimum wage in Australia (FWC 2014).

Wide comb dispute in the Pastoral Industry Award

In 1984, sheep shearers and farmers disputed the use of shearing combs wider than 2.5 inches (which had been the standard) (O'Malley 2009; Sullivan 2013). Shearers argued that the change would attract cheaper labour from New Zealand, who already used the wider combs, and were paid less in New Zealand largely because of Australia's stronger currency at the time. Farmers, however, claimed that the wider combs would improve productivity. Shearers went on strike for six weeks, but the Australian Conciliation and Arbitration Commission ruled to allow the use of wide combs.

[47] Ex parte HV McKay (Harvester Case) (1907) 2 CAR 1 [8 November 1907]

Most farm businesses (except some in Western Australia) are covered by the *Fair Work Act 2009* (Cwlth) (PC 2015f).[48] The Fair Work Act cites a diverse set of objectives, including to deliver outcomes that are fair, flexible, co-operative, productive, relevant, enforceable, non-discriminatory, accessible, simple and clear.

In 2015, the Commission held an inquiry into the workplace relations framework (PC 2015f), which assessed all aspects of the framework and addressed many of the concerns raised in this inquiry about provisions in the Fair Work Act. For example, the NFF (sub. 61, pp. 33–36) identified a number of 'red tape' concerns in the Fair Work Act that the Commission made recommendations on. The NFF said that:

- the requirement to review all awards every four years was 'excessive'. The Commission's workplace relation's inquiry recommended removing this requirement (recommendation 8.1)
- the notice of representational rights was an 'unnecessarily strict approach with severe consequences for employers — the Commission recommended allowing the Fair Work Commission wider discretion to overlook minor procedural or technical errors when approving an agreement, and extending the scope of this discretion to include minor errors or defects relating to the issuing or content of a notice of employee representational rights (recommendation 20.1)
- the drafting of the protections provision was 'opaque' and 'its effect not clear for most users' — the Commission recommended that amendments be made to section 341 of the Fair Work Act to more clearly define the meaning and application of workplace rights (recommendation 18.2).

Other concerns raised by participants to this inquiry related to overtime and penalty rates, and the prescribed minimum length of shifts.

Overtime and penalty rates

Like many other modern awards, the Pastoral Award 2010 and Horticulture Award 2010 pay overtime and penalty rates for work outside any ordinary hours on Monday to Friday. The rates are generally one and a half times the regular hourly wage for work after hours or on Saturday, and double the regular wage for Sunday work.[49]

A number of participants (for example, Tasmanian Farmers and Graziers Association, sub. 16, and Voice of Horticulture, sub. 42) claimed that overtime and penalty rates

[48] The Fair Work Act covers most aspects of the employment relationship between employees and employers and sets a variety of minimum standards. Unincorporated enterprises in Western Australia and many employees paid by state governments are not covered under the Fair Work Act (PC 2015f).

[49] These rates can vary somewhat depending on the particular occupation covered under the award. For example, a farm and livestock hand working on a Sunday is paid their regular wage for any ordinary hours that they agree to work, and twice the regular wage for overtime work except in the case of feeding and watering stock, for which they are paid one and a half times the regular wage for overtime work.

significantly increased the costs of production to farms that hire workers. They also noted that rates based on a Monday to Friday working week do not reflect the seasonal nature of agricultural work. Also, many agricultural activities occur early in the morning or at night, and continue to be carried out on weekends — all of which are subject to penalty rates. AgForce, for example, said:

> The appropriateness of set mandatory penalty rates, given the timing requirements of many farms where many activities cannot be done between the more urban-relevant 9am to 5pm period eg, night spraying when wind and temperature are appropriate to make best use of applied chemical and 24-hour crop planting practices during the time-limited, more effective window. Such non-standard conditions can be offset by providing employees with other rurally-relevant options to maintain equitable employment conditions. (sub. 17, p. 10)

Both Tropical Pines (sub. 39) and the Tasmanian Farmers and Graziers Association (sub. 16) acknowledged that the Pastoral and Horticulture Awards contain provisions that accommodate some of the nuances of agricultural work. For instance, both awards consider ordinary hours of work to be between 6am and 6pm from Monday to Friday for some occupations. The Horticulture Award also does not pay casual workers penalty rates for weekend work.

The Fair Work Commission sets penalty rates in modern awards and, in doing so, should consider the effects of penalty rates on the wider community (including those who are not in work). This was recommended by the Commission's workplace relations inquiry through revising the modern awards objective in the Fair Work Act (recommendation 8.3) (PC 2015f).

The Commission's Workplace Relations inquiry also advocated for greater use of quantitative and qualitative data analysis when setting penalty rates. An example of this analysis underpins the inquiry's recommendation to align Sunday penalty rates that are not part of overtime or shift work at the higher rate of 125 per cent and Saturday penalty rates for permanent employees in the hospitality, entertainment, retail, restaurant, and café industries (recommendation 15.1). Such analysis could be used as a template for assessing the penalty rates in the Pastoral and Horticulture Awards.

Minimum shift length in the Pastoral Award and Horticulture Award

A number of participants (for example Tasmanian Farmers and Graziers Association, sub. 16, and Australia Dairy Farmers, sub. 63) raised concerns about provisions in the Pastoral Award 2010 that stipulate that part-time and casual employees must be engaged for three hours every shift. The Horticulture Award 2010 also specifies that employers pay workers a minimum of three hours of wages for working on Sundays.

ADF claimed that this stipulation 'does not meet the modern requirements of a dairy farm' (sub. 63, p. 11) and that the time it takes to milk depends on the season, the size of the herd and the technology used on-farm. This can mean that some farms take less than three hours to milk their entire herd.

> The requirement to pay a staff member for 3 hours' work, rather than the hours actually worked, creates unnecessary costs to farmers, and also acts as a barrier to employment for employees who seek flexible working arrangements. (sub 63, p. 11)

ADF's submission to the Commission's review of the Workplace Relations Framework also stated that the three hour minimum engagement 'removes any incentive for staff to milk in a time-efficient manner, thus lowering productivity' (2015, p. 1).

The Fair Work Commission is currently reviewing all modern awards and provides an opportunity for concerns to be raised about flexibility constraints affecting the competitiveness of farm businesses (FWC 2015). The Fair Work Commission has sought feedback on the minimum shift length for a casual employee (which other awards also include), and it is exploring whether parties should be able to agree to a shorter minimum length if it suits their circumstances (FWC 2016).

The Commission's Workplace Relations Framework inquiry's recommendations to revise the modern award objective, and amend the Fair Work Act to ensure modern awards can be varied if necessary to achieve or improve outcomes according to the revised modern awards objective, will help the Fair Work Commission better assess farm businesses' concerns about awards (PC 2015c).

10.4 Work health and safety

The objective of work health and safety (WHS) regulations is to help prevent workplace injuries and diseases by encouraging employers, employees and regulators to work together to provide safe and healthy workplaces. WHS is regulated by the states and territories, but most (except Victoria and Western Australia)[50], as well as the Commonwealth have implemented model regulations, with changes in some instances (SWA 2016b).

Agricultural work involves a range of hazards, including handling animals and using chemicals, agricultural vehicles and machinery. Safe Work Australia described agriculture as 'unique' from a WHS perspective and noted that:

> While other industries share some of the hazards of farming such as plant, chemicals, noise, dust, sun exposure or working with animals, the combination of hazards found in agriculture, make it one of the most dangerous industries in which to work. (sub. 10, p. 1)

Many farmers are self-employed and live and work on their property. As Safe Work Australia said:

[50] Western Australia is currently consulting on the draft legislation that incorporates the model (Western Australian Department of Commerce 2016). Victoria is also reviewing its legislation (which expires in June 2017), but the Victorian Government has stated that it will not adopt the model regulations in their current form (Work Safe Victoria 2016a, 2016b).

> Self-employed farmers face the demands and stress of running a business as well as undertaking the hard physical labour involved in farm work … In addition to being places of work, farms are unique in that they are also homes, often with children. (2013, p. iii)

Farmers also often work on their own (which means they may not have anyone to assist them if they are injured on the job) and they can be working at a distance from any help (SWA 2013).

A dangerous industry to work in

Agricultural workers have one of the highest rates of fatalities and serious workers' compensation claims across industries. Between the period 2003 and 2014, the fatality rate for agricultural workers was 14.4 fatalities per 100 000 workers. This fatality rate is over six times higher than the rate for all industries (box 10.6).

Vehicles are the main cause of fatalities on farms. Between July 2003 and June 2011:

- incidents involving vehicles accounted for 71 per cent of all fatalities on farms
- tractors were involved in 26 per cent of farm deaths, light vehicles 8 per cent, quad bikes 8 per cent, and aircraft accounted for 13 per cent (SWA 2013).

Of the incidences not involving a vehicle, the most common causes of fatalities on farms involved being hit or bitten by an animal, falling from a horse and other falls, and electrocution (SWA 2013).

Safe Work Australia (sub. 10) estimated the cost of work-related injuries and fatalities in the agriculture industry to be $2.35 billion in 2012-13.

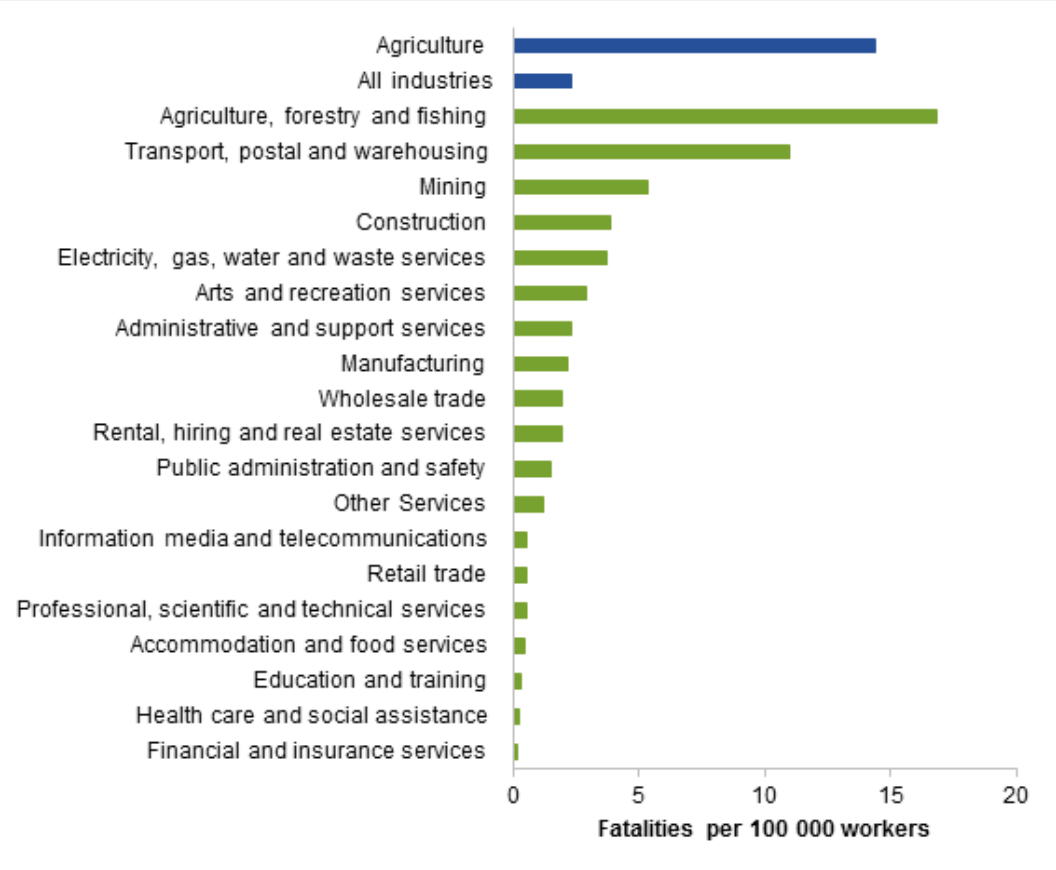
Agriculture is one of seven priority industries identified under the Australian Work Health and Safety Strategy 2012–2022. The priority industries are the focus of activities by regulators, employer and employee groups to identify the common causes of injury and fatality and to find and implement solutions (Safe Work Australia, sub. 10).

Box 10.6 Agriculture — high fatality and serious claim rates

Between 2003 and 2014, the fatality rate for agriculture workers was 14.4 injury fatalities per 100 000 workers, which was over six times higher than the rate for all industries (2.35) (figure). A comparison of injury fatalities per 100 000 workers for different industries is depicted in the graph below. In this period, the agriculture industry accounted for 17 per cent (509) of fatally injured workers, despite making up 3 per cent of the Australian workforce.

Fatality rates across industries[a]

2003-2014



[a] Data on sub-industries (as shown for Agriculture) are not available for all industry groupings

Serious workers compensation claims are also disproportionately high in the agriculture sector. Over the five-year period between 2009-10 and 2013-14, the rate for agriculture workers was 11 serious claims per million hours worked. This rate was 59 per cent higher than the rate for all industries (6.9) and higher than every other industry.

Source: Safe Work Australia (2015, sub.10).

The model WHS regulations

Safe Work Australia developed model regulations through 2009–2012 as an outcome of the *Intergovernmental Agreement for Regulatory and Operational Reform in Occupational*

Health and Safety that aimed to help jurisdictions harmonise their regulations (SWA 2016a). State, territory and Australian governments signed the Agreement in July 2008, which sets out principles and processes to harmonise regulations and enforcement activities across jurisdictions (COAG 2008).

All jurisdictions except Victoria and Western Australia have adopted the model WHS laws. Queensland, South Australia and the ACT have made a number of substantive amendments to their WHS laws, but core provisions remain the same in all of the jurisdictions that have adopted the model WHS laws. Western Australia is developing legislation which would adopt key provisions of the model WHS laws (Safe Work Australia, sub. 10).

The model WHS regulations comprise laws and Codes of Practice. The laws include the WHS Act, which governs the WHS framework in a jurisdiction and contains 'general duties' that those who are responsible for WHS must meet; and the WHS Regulations, which set out how to meet obligations in specific areas where there are significant risks to health and safety, such as hazardous chemicals (Safe Work Australia, sub. 10).

Non-mandatory Codes of Practice provide further practical guidance to employers on how to manage risks, and the minimum level of safety that employers must provide in the workplace. Employers are not required to adhere to the Codes and can manage risks in other ways as long as they are at least as safe .

There are no specific regulations under the model WHS laws targeted at agriculture, therefore farming businesses are subject to the same WHS requirements as other workplaces (Safe Work Australia, sub. 10).

Regulatory issues

While farm businesses and their representatives confirmed their support for the policy objectives underlying WHS regulations, they aired concerns about:

- the level of prescription of the WHS regulations
- the complexity of WHS regulations
- penalties for non-compliance being so severe in some cases that they act as a disincentive for farm businesses to employ staff
- the responsibility of WHS falling disproportionately on employers.

Calls to reduce the level of prescription

Cotton Australia argued that the same health and safety outcomes for workers could be achieved without the level of prescription in the WHS regulations:

> Reducing the level of prescription in many cases will have no negative effect on health and safety of workers but will make complying with the WHS Act easier. (sub. 23, pp. 18–19)

And they, for example, said that while licenses for forklift drivers in high risk environments such as warehouses may be justified, employers should not need to ensure forklift drivers on a farm attain licenses when operators of other machines like a front-end loader do not need one.

The NFF argued that many of the WHS Regulations are 'unworkable or too hard to comply with' in the context of the agriculture sector (sub. 61, p. 37).

AgForce (sub. 17) and Voice of Horticulture (sub. 42) noted that farm businesses spend significant amounts of time complying with WHS regulations.

Complexity, jurisdictional differences and penalties are also a source of concern

Others said that the system is difficult to navigate and it is not easy to stay up to date with WHS requirements. GrainGrowers, for example, said:

> Navigating the regulations around Workplace Health and Safety (WH&S) is a difficult endeavour for many Australian grain farming businesses. To ensure proper compliance, farmers must be familiar with the *Work Health and Safety Act 2011* and all associated material, including 23 Codes of Practice, 46 pieces of Guidance Material and 29 fact/information sheets. The sheer quantity of information can be overwhelming for small farming businesses, and farmers often struggle to maintain up-to-date knowledge of all WH&S requirements. (sub. 73, p. 21)

Others questioned whether the model laws had made WHS simpler. The Tasmanian Farmers and Graziers Association, for example, said:

> The new system sought to make WHS simpler and more streamlined however for many employers it has added more grey to the plethora of regulation that control them daily. (sub. 16, p. 5)

And others expressed concerns about different rules in different jurisdictions despite model laws being implemented (Consolidated Pastoral Company, sub. 71). In the Commission's previous *Review of Regulatory Burdens on Business: Primary Sector*, many more submissions than in this inquiry raised the issue of different rules across jurisdictions, which suggests that the model regulations have addressed (at least to some extent) concerns in this area.

The NFF argued that unclear regulations and disproportionate penalties dissuaded farmers from hiring workers:

> Many farm businesses are not clear on their obligations under the WHS Act but fear the financial implications of a safety incident and subsequent prosecution. Rather than risk it, they choose not to employ any labour at all. This is a clear barrier to growth and productivity in the agriculture sector. (sub. 61, p. 37)

The NFF provided examples of penalties in the WHS Act that it considered were disproportionate including, for instance:

> … the penalty for engaging in discriminatory conduct for a prohibited reason is a maximum of $100 000 for an individual and $500 000 for a body corporate. The penalty for a comparable offence under the *Fair Work Act 2009* (Cwlth) is $10 200. (sub. 61, p. 37)

The NFF called for a comprehensive review of the level of penalties and how the Criminal Code is applied to breaches of WHS laws.

Responsibility of WHS falling disproportionately on employers

The WHS Act places a duty on employers and persons with management or control of a workplace to eliminate health and safety risks so far as is reasonably practicable (SWA 2011).[51] The WHS Act also requires that workers take reasonable care for their own health and safety and that of others, and co-operate with and comply with reasonable directions from those managing the workplace (SWA 2012).

The Commission's case study participants raised concerns about the duty of care falling disproportionately on employers. They experienced difficulties when trying to meet WHS regulations, and said the imbalanced duty of care dissuaded them from hiring employees (box 10.7). Beef, sheepmeat and goat producers also highlighted the disproportionate duty of care as an issue (Sheepmeat Council of Australia and Cattle Council of Australia, sub. 88, att. 1).

Additional labelling requirements on manufacturers of agriculture and veterinary chemicals

From 1 January 2017, WHS regulations will require manufacturers of agricultural and veterinary chemicals to comply with the Globally Harmonized System of Classification and Labelling of Chemicals (SWA 2016c). Several inquiry participants argued that these requirements overlapped with those of the Australian Pesticides and Veterinary Medicines Authority. This issue is examined in chapter 6.

[51] Specifically, those with a duty to ensure health and safety are 'persons conducting a business or undertaking, including employers, self-employed, principal contractors, persons with management or control of workplace, designers, manufacturers, importers and suppliers of plant, substances or structures that are used for work.' (SWA 2011, p. 2)

Box 10.7 Farmers' perspective – duty of care is imbalanced

A manager of a cotton farm in southern Queensland said that the work, health and safety (WHS) regulations disproportionately placed a duty of care on farm businesses (rather than the employees). He said employers and employees need to share the risks, and that farm owners cannot control all the circumstances that employees find themselves in. He said employees are often best placed to manage their own risks, noting 'currently the business has to take responsibility for everybody's momentary lapses of judgement'.

The co-owner of a large vegetable processing business also told the Commission that WHS should be a shared responsibility between employers and employees. He said he respects his workers as responsible adults, and recognises that they are often best placed to manage WHS risks.

However, he told the Commission that the enforcement of WHS regulations in Australia has evolved to place far too much responsibility on employers, and not enough on employees and visitors to the facility. As a result, he and the other co-owners of the business had concerns that a major WHS incident could unexpectedly cost them $100 000 or more, and threaten the financial viability of the business. He said 'It doesn't matter what we do, it's never enough.'

The co-owner told the Commission that the primary productivity cost of implementing WHS regulations in this way is the disincentive it creates to employ people. He said it 'pushes' the business to use machinery to complete tasks that could otherwise be done more efficiently by people.

Source: Productivity Commission case study interviews (appendix C).

Governments are taking steps to improve WHS regulations

Designing WHS policies is difficult. It can be unclear whether a workplace is safe because of effective regulation, or because there is little risk.

An appropriate level of prescription can be hard to settle on. While prescriptive regulations restrict businesses, flexible regulations may not provide sufficient guidance to businesses on how to meet their obligations. For example, a cotton farmer from southern Queensland told the Commission that he was anxious about meeting his WHS requirements despite implementing the industry code (appendix C).

Penalties should be large enough to convince businesses that the risks and associated cost of being caught outweigh the gains from non-compliance. But the penalty should not be so large as to bankrupt businesses or dissuade efforts to improve on the standards set by regulation. Penalties should be balanced with measures that promote compliance among businesses by, for example, offering incentives for businesses to comply with regulations, including reduced rates of inspection.

An important role for the regulator is to provide clear information to employers about their obligations. This can be particularly useful for small businesses. Regulators have taken steps to improve their information dissemination. For example, SafeWork NSW has

published several instruction videos for employers on how to meet their duties (SafeWork NSW 2016).

In 2014, the Council of Australian Governments (COAG) initiated a review that considered whether the model WHS laws were simple, appropriate for the risks that they address, and facilitated businesses to adopt flexible approaches to manage risks (SWA 2014). The review recommended changes to: make health and safety representative training more effective; bring right of entry provisions in line with the Fair Work Act; and make model Codes of Practice clearer and easier to use. In addition, COAG tasked WHS Ministers with reviewing the WHS Regulations to identify and address any areas that are overly prescriptive, unnecessary, duplicative and create enforcement difficulties (Safe Work Australia, pers. comm., 31 May 2016). Safe Work Australia is currently conducting this review.

The model WHS laws are also scheduled to be comprehensively reviewed by the end of 2017: upon agreeing that model laws be developed, the Workplace Relations Ministerial Council agreed to a review within five years of the laws commencing (WRMC 2009), and states and territories (except Victoria and Western Australia) implemented the model laws in 2012 and 2013 (SWA 2016b).

This review should build on the findings from earlier reviews and look to reduce the compliance burden on businesses, ensure penalties for breaches are not disproportionately high, and the laws and ways to achieve the prescribed requirements are clear to businesses and others. It should explore ways to improve information dissemination to employers, particularly so employers do not feel compelled to pay for advice on complying with WHS laws: the Commission heard some evidence that many employers paid consultants to do this.

11 Competition regulation

Key points

- Competition is a key driver of innovation, productivity and competitiveness in agriculture.
- Widespread regulation of agricultural markets through statutory marketing up until the 1990s imposed costs on consumers and domestic user industries as well as the regulated industries. The arrangements constrained both competition and productivity.
- Australian governments have removed almost all statutory marketing arrangements. Just two remain — the New South Wales Rice Marketing Board (RMB) and the Potato Marketing Corporation in Western Australia.
- The New South Wales RMB maintains single-desk exporting by issuing an exclusive export licence to SunRice. One of the objectives of the RMB is to secure the best possible price for Australian rice in export markets. However, it is unclear whether Australian rice exporters receive a price premium for their rice. Repealing the *Rice Marketing Act 1983* (NSW) will create incentives for innovation and cost savings in rice marketing that could increase premiums for some rice growers.
- The regulation of Western Australia's potato industry had its origins in Australia's national security regulations imposed during World War II. The arrangements are out-of-date and have resulted in less variety and higher potato prices for Western Australian consumers. The planned deregulation should improve the responsiveness of the industry to changing consumer preferences and reduce the price of potatoes in Western Australia.
- Legislation passed in December 2015 to reregulate the Queensland sugar industry is likely to constrain investment and structural adjustment, and should be repealed.
- Suggestions to amend section 45 of the *Competition and Consumer Act 2010* (CCA) are unlikely to increase the adoption of collective bargaining in the agricultural sector because they do not address significant economic disincentives and a cultural aversion in the sector to participating in cooperatives.
- The introduction of an 'effects' test to section 46 of the CCA is also unlikely to shield farm businesses from intense competition in retail food markets. The current focus on the misuse of market power by wholesale merchants and supermarkets overlooks the critical co-dependence of businesses along the agricultural value chain. It also risks overlooking potential new commercial arrangements for farm businesses to participate in globalised value chains.
- Industry codes of conduct can provide a flexible regulatory framework to influence behaviour in agricultural markets and improve transparency and clarity of transactions.

Competition is not an end in itself, but it plays a crucial role in promoting economic efficiency and enhanced community welfare. Competition provides a strong incentive for firms to innovate, reduce costs and meet the preferences of consumers. It also helps society

to generate the highest value from its scarce resources and, in doing so, generates higher real incomes and living standards.

Competition is a dynamic process. Commercial success in competitive markets requires the ability to reallocate resources to new products and processes to meet changing market conditions. To remain competitive, Australian farmers need to innovate and improve productivity at a faster rate than their competitors in domestic and international markets.

The competitive process drives efficiency improvements by encouraging the entry of new, or the expansion of existing, more efficient businesses, while the less efficient businesses decline or exit. In agriculture, larger farm businesses tend to be more efficient than smaller farm businesses, and competitive markets have driven the gradual consolidation of farms (Gray, Oss-Emer and Sheng 2014). Larger farms enable economies of scale in production and facilitate capital investment that allows more efficient use of labour (Hooper et al. 2002; Nossal and Gooday 2009).

The objective of competition policy is to improve community welfare by increasing economic efficiency. However, markets may not always result in efficient outcomes. This can be because of a lack of effective competition and inadequate information (examples of market failures), or because of government intervention in markets through regulations and policy arrangements.

The unconstrained operation of competitive markets (and the structural adjustment that results) has for decades raised concerns about the balance of power in arrangements between small farm businesses and larger wholesale merchants and supermarkets. Remoteness, isolation and lack of marketing expertise have historically been argued as factors that place farmers at a significant disadvantage in negotiating sales with larger and better informed input suppliers and purchasers of agricultural produce (Sapiro 1923). The potential concentration of market power into the hands of a relatively small number of well-organised traders has also been seen as disadvantaging diverse, dispersed and less-organised farmers in terms of price and the terms of supply agreements.

The National Farmers' Federation (NFF), for example, argued that the agricultural sector has specific and unique characteristics that mean that ineffective competition legislation can have a more detrimental bearing on farm businesses than on other businesses:

> The farming sector is fragmented, made up largely of small to medium sized businesses in remote areas with limited access to market information and opportunities for collective organisation. Fluctuations in input costs, the impact of climatic variations, limitations in infrastructure and the perishable nature of produce leave some farmers in an economically vulnerable position operating under extremely tight margins. This inequality of market and or bargaining power means that farmers are largely price-takers in the market and susceptible to at times questionable business practices. Farmers may be forced to accept standard form contracts on a 'take it or leave it' basis or to operate under arrangements without the benefit of contractual security. (sub. 61, p. 28)

Concerns about market power have led to continued calls for regulation to protect small farm businesses from larger businesses. Since the turn of the 20th Century, governments around the world have used two main forms of regulation to address these concerns — statutory marketing arrangements (appendix B) and competition law.

This chapter looks at statutory marketing arrangements (section 11.1) and competiton law (section 11.2), including industry codes of conduct (section 11.3).

11.1 Statutory marketing

Statutory marketing arrangements are a package of inter-related regulations that compel farmers to sell to a single marketing agent (Watson and Parish 1982). In Australia, the term *single-desk marketing* is used to describe the monopoly selling powers held by statutory marketing authorities (PC 2000). In some cases, the powers extend to both domestic and export sales of commodities, in others, the monopoly extends to export sales only.

For most of the 20th century, statutory marketing shielded many of Australia's agricultural industries from competition (appendix B). In 1982, at the height of statutory marketing, Australia had 11 marketing boards operating under Commonwealth legislation and more than 50 operating under state legislation (Watson and Parish 1982).

Over the years, numerous arguments for statutory marketing arrangements have been put forward, including:

- *unstable world markets* — volatile food prices (partly attributed to high levels of protection in world markets and fixed exchange rate policies) were perceived as working against industry development and rural welfare objectives
- *market power* — for some agriculture products, the concentration of market power among a relatively small number of wholesale merchants and/or supermarkets was thought to disadvantage farmers on price and terms of supply agreements
- *information failures* — remoteness and lack of marketing expertise (especially in the pre-digital age) were perceived as placing farmers at a significant disadvantage in negotiating supply agreements
- *distorted input markets* — high farm input costs arising from trade and other forms of protection on input-supplying industries were used to justify 'countervailing' protection to compensate agricultural industries.

While producers perceived there were benefits for them from restricting competition, it became increasingly clear during the late 1980s and early 1990s (as governments reviewed interventions in agriculture) that restricting competition in the interest of one industry imposed significant costs on taxpayers, consumers and user industries. Statutory marketing at this time also became less effective at raising domestic prices as improvements in transport and communication increased competition in domestic and global markets (improvements in communications technology also reduced the information disadvantages

of remoteness). Internationally, countries also began to recognise that attempts to insulate agricultural markets via trade protection increased price volatility on world markets (Anderson 2014).

A series of reviews and inquiries from the 1990s onwards found that statutory marketing arrangements were impairing agricultural industry performance for several reasons:

- limited recognition of product quality or other valued product characteristics in pooled producer returns, which tended to reward lower-valued products at the expense of higher-value products, discouraging the more efficient and innovative producers
- compulsory pooling of returns mean that sales risks are average across growers — this fails to accommodate different risk preferences of producers
- pooling of transport and distribution costs which could encourage inefficient distribution and production (resulting in higher costs)
- lack of competition and choice of service provider, which could promote inefficient service provision, including over-servicing and cost-padding by the statutory marketing authority
- payment of an average price for products which could distort production levels (PC 2000).

In 1995, recognising the benefits of removing unnecessary restrictions to competition, Australian governments committed to a series of agreements to increase competition under National Competition Policy. The Competition Policy Agreement required that any legislation which restricted competition be examined by the end of 2000. The legislative review program was aimed at ensuring that legislation did not restrict competition unless it could be shown that the benefits to the community as a whole outweighed the costs and the objectives of the legislation could only be achieved by restricting competition. The legislative review program provided renewed impetus to the reform of statutory marketing arrangements (appendix B).

Two statutory marketing boards remain in operation — the Rice Marketing Board (RMB) in New South Wales and the Potato Marketing Corporation in Western Australia.

However, there is also the potential for new statutory marketing arrangements in Australia's sugar industry in Queensland. In December 2015, the Queensland Parliament passed legislation to enable sugarcane growers to direct how millers market sugar internationally.

Rice marketing in New South Wales

The RMB was the first commodity marketing board in New South Wales. It was initially established under the *Marketing of Primary Products Act 1927* (NSW). The domestic marketing of rice in New South Wales was deregulated in 2006 but the RMB maintains single-desk exporting by issuing an exclusive export licence to SunRice.

Under the *Rice Marketing Act 1983*, all rice produced in New South Wales is vested in the Board (that is, the Board is its legal owner). The objectives of the RMB are to:

- encourage the development of a competitive domestic market for rice
- ensure the best possible returns from rice sold outside Australia based on the quality differentials or attributes of the Australian grown rice
- liaise with and represent the interests of all New South Wales rice growers in relation to the Board's functions and objects (RMB 2016).

A key question is whether the continuation of statutory marketing arrangements are required to achieve higher returns for New South Wales rice growers than would otherwise be the case. The RMB has previously pointed to price premiums[52] as evidence that statutory marketing arrangements are working and should be maintained (RMB 2013). However, price premiums are not necessarily evidence that single-desk marketing is working — price premiums can also be a result of normal commercial innovation.

Price premiums can also be achieved by producing a product with intrinsic quality and service characteristics that consumers are prepared to pay more for, relative to commodity-grade alternatives. The Ricegrowers' Association of Australia noted that Australian grown rice delivers a premium to global competitors for two major reasons:

> Australian grown rice has very favourable perceptions amongst consumers in several key markets. This is due to the favourable perceptions of Australia as a good country for growing food as well as the quality of Australian rice, driven by our varietal development, processing infrastructure and total supply chain quality assurance.
>
> Branding of New South Wales rice by SunRice has added considerable value to the exports. SunRice's brands have very strong recognition in key markets and can achieve a premium over competitor product. This has allowed SunRice to maintain some premium in markets over the last few years despite competing with traded rice from competitor countries. (2012, p. 8)

Previous Productivity Commission inquiries raised questions about whether regulated single-desk marketing is necessary to generate this type of price premium, and argued that competition was likely to drive innovation and higher premiums (IC 1991; PC 2000).

Some argue that collective bargaining can prevent quality and service premiums from being competed away by multiple small suppliers. However, the experience in other grain industries is that deregulation leads to innovation and reduces inefficiencies associated with single-desk marketing, which improves industry performance (PC 2010c).

Australia is unlikely to be able to exert monopoly power in rice export markets — it is a price taker. Australia contributes less than 1.5 per cent of total world exports of rice (ABARES 2015a), and 3.5 per cent of japonica exports (FAO 2016). Any price premiums

[52] The term 'price premium' is used to describe the difference between the prices that growers receive as a result of the activities of the RMB, relative to the price that would be received under alternative (non-statutory) marketing arrangements.

generated in rice export markets are more likely to reflect quality and branding advantages than market power.

Is there evidence of price premiums?

The debate about whether to continue statutory marketing of rice in New South Wales has focused on RMB's ability to generate price premiums for rice growers.

Dating back to the mid-1990s, there have been a number of reviews of the single-desk export selling arrangements for the New South Wales rice industry:

- a National Competition Policy review in 1995-96 concluded that the single-desk export selling arrangements of the New South Wales rice industry generated market premiums for the rice industry and a net benefit to the community; a further review in 2004-05 came to the same conclusion
- a 2009-10 review did not conclusively argue that the single-desk export marketing arrangements were delivering price premiums to growers and broader community benefits. The review called for stronger accountability arrangements and for initiatives and performance information to form a key consideration in any decision to continue the arrangements beyond 2013 (NSW Government 2012).

In 2012, a review of statutory rice marketing arrangements by the New South Wales Government recommended the continuation of single-desk marketing for rice based on price premiums generated in export markets:

> … there is evidence to support a finding that the single-desk enabled by vesting is delivering price premiums in export markets relative to SunRice competitors selling into those markets. (NSW Government 2012, p. 14)

The review recommended that vesting be renewed until 30 June 2017, with further extension subject to a review to determine whether export price premiums, relative to those received by other international competitors on export markets, continue to be achieved.

The New South Wales Department of Primary Industries is currently conducting a review to examine whether an extension of vesting by the RMB Marketing Board can be justified by the realisation of premium returns to growers on export sales beyond 2017 (NSW DPI 2016a).

However, the evidence presented to the 2012 review on price premiums was inconclusive. Economic analysis undertaken by Deloitte Access Economics found no evidence of price premiums in export markets (Deloitte Access Economics 2012). In contrast, analysis by SunRice claimed price premiums ranged from 5 to 20 per cent in diverse export markets (Deloitte Access Economics 2012). Analysis undertaken by Grant Thornton using volume-weighted local prices in five export regions also suggested that the value of price premiums to rice growers was $82.4 million for the year ended 30 April 2015 (RMB 2015a).

It is not easy to assess whether, and to what extent, single-desk marketing by the RMB and SunRice results in a price premium, and whether or not the price premium is paid back to rice growers (PC 2000). This is in part because detailed price data on exports by country of destination are not published in Australia, which makes it difficult to assess claims of product differentiation across diverse markets. A guiding principle is that price premiums should be apparent in aggregate data (as price premiums generated in one export market may be dissipated in others).

To assess the price premium, the Commission updated the work of Deloitte Access Economics (2012) (appendix D). This preliminary analysis compared the unit value of Australian exports to the price of Californian rice exports (where there is no statutory rice marketing) over the period 1989–1990 to 2012-2013 (and separately for the period 2003-04 to 2012-13) using aggregate export data. Based on this analysis, the Commission did not find evidence of a price premium for Australian rice exports (appendix D).

However, a weakness with this type of analysis is that it relies on global averages, rather than individual country data (NSW Government 2012). SunRice is the only exporter of rice from Australia, and the Australian Bureau of Statistics maintains commercial confidentiality by not publishing export data for each destination country. The Commission sought to address this concern by recalculating price premiums using data for rice imported from Australia into 123 countries between 1986 and 2013 (appendix D). The analysis was repeated for 25 countries in the Middle East and North Africa, and for New Zealand.

Some premiums may exist in markets such as New Zealand, but these appear to be offset by price detriments in other markets. The Commission's preliminary analysis suggests there may even be some overall price detriment[53] for Australian rice exporters. However, price premium estimates are sensitive to the adjustments made to account for freight costs and package value-adding. This may partly explain the more favourable results of previous analyses compared to those of the Commission.

Weighing up the costs and benefits

The existence of price premiums, even if accurately measured and proven, is not sufficient to justify statutory marketing. Other costs such as efficiency costs (noted above) of single-desk arrangements plus any additional costs incurred by single-desk authorities in obtaining those premiums also need to be taken into account (PC 2000).

The expenses of the RMB were $564 000 in 2014-15, with a planned budget of $626 000 for 2015-16 (RMB 2015b). It is more difficult to estimate the intangible costs of inefficiencies that may arise from a lack of competition in the international marketing of Australian rice. As discussed earlier, the dismantling of other statutory marketing authorities in other industries has led to more competition and innovation in marketing.

[53] The term detriment is used to describe a price premium that is negative (lower prices than would otherwise have been achieved).

In submissions to past inquiries and annual reports by growers, the rice industry reported significant net benefits from maintaining a single-desk (RMB 2015b). But price premiums are difficult to verify and appear to be confined to markets where Australia has a transport advantage over potential competitors (such as New Zealand).

Statutory marketing enables rice growers to bargain collectively by requiring them to sell their rice to a single processing company. In a deregulated market, competing marketing companies would have an incentive to retain grower loyalty by maximising price premiums without incurring the costs of statutory marketing. This incentive to innovate and reduce marketing costs is likely to result in higher profits overall for rice growers.

The single-desk export selling arrangements for the New South Wales rice industry should be deregulated.

DRAFT RECOMMENDATION 11.1

The New South Wales Government should repeal the *Rice Marketing Act 1983.*

Potato marketing in Western Australia

It is illegal to sell fresh 'table' potatoes grown in Western Australia for human consumption without a licence from the Potato Marketing Corporation. The Potato Marketing Corporation undertakes a number of functions under the *Marketing of Potatoes Act 1946* (WA), including:

- determining the quantity and the colour of potatoes produced
- issuing licences (a domestic market entitlement) to grow potatoes
- setting the price that growers will receive
- licensing wash packers (wholesalers that receive, wash and pack potatoes)
- acting as the monopoly seller of potatoes to the wholesale market (ERAWA 2014).

The Potato Marketing Corporation is funded by a levy on growers.

The Marketing of Potatoes Act was created to ensure that consumers in Western Australia had a reliable supply of potatoes following the disruption to agricultural markets caused by World War II. The Potato Marketing Corporation is the last statutory marketing authority left in Australia that controls domestic production by registering growers and licensing areas of land where potatoes can be planted.

While the Potato Marketing Corporation has for some time reported that it no longer uses its powers to search for and seize unlicensed potatoes, legal action was used as recently as December 2015 to restrict the quantity of potatoes that farmers can grow (Wahlquist 2015). The Economic Regulation Authority of Western Australia (ERAWA) (2014) found that

long term increases in consumer prices caused by restricting competition had become capitalised into the value of entitlements that sell for between $350 and $600 per tonne.

The Western Australian Government announced in May 2016 that it intends to deregulate the potato industry (Nalder and Redman 2016). To effect this deregulation, the Western Australian Government introduced the Marketing of Potatoes Amendment and Repeal Bill (2016) to the Legislative Assembly on 30 June 2016. The majority of Western Australian potato growers are said to support deregulation (Thompson 2015). In its submission to this inquiry, the Western Australian Government noted that its Department of Agriculture and Food was progressing deregulation of the potato industry with advice from the Western Australian Department of Finance on transitional assistance (sub. 54).

The public policy objectives of maintaining the statutory marketing of potatoes in Western Australia for so long are difficult to identify. The Potato Marketing Corporation's annual report states that it exists to fulfil the functions of the Marketing of Potatoes Act (PMC 2015).

The market conditions under which potato marketing in Western Australia were originally regulated are no longer in place.

The Potato Marketing Corporation interprets its current role as restricting the supply of potatoes to match a level of demand consistent with maintaining a constant price of potatoes, and therefore income for potato growers (PMC 2015).

In response to a review by the ERAWA, the Potato Marketing Corporation also argued that its activities counteract the market power of major supermarkets (ERAWA 2014). Combatting the market power of supermarkets is not one of the functions given to the Potato Marketing Corporation under the Act. The ERAWA found that major supermarkets purchase 42 per cent of potatoes marketed by the Corporation, and that there was substantial competition amongst buyers of potatoes.

After extensive consultation and review, the ERAWA concluded that:

> … the existing regulations on the potato market are holding back the industry and are not serving the Western Australian public well. As such, the ERA recommends that the Marketing of Potatoes Act 1946 and Marketing of Potatoes Regulations 1987 be repealed. (ERAWA 2014, p. 317)

The statutory marketing arrangements for potatoes in Western Australia are also ineffective — they do not supply the quantities, kinds and qualities preferred by consumers. The ERAWA (2014) found that Western Australian consumers had a more limited choice of potato varieties when compared to consumers in eastern Australia. In the rest of Australia where potato markets have long been unregulated, consumer preferences have shifted since the 1990s from white to yellow varieties. Statutory marketing arrangements appear to have impeded the response of Western Australian potato production to this major change in consumer preferences.

The marketing arrangements also appear to have had an impact on the productivity of potato production in Western Australia. South Australia, for example, has a similar number of potato growers, however it produces more than five times the volume of potatoes. The ERAWA also found that the regulation of 'table' potato marketing in Western Australia has hampered the development of a seed potato export industry in that state (ERAWA 2014).

The ERAWA found that statutory marketing of potatoes provided monopoly rents for 78 farm businesses at the expense of 2.6 million consumers in Western Australia:

> … restrictions on potato marketing have raised the incomes of potato growers in Western Australia. However, this has been at the expense of Western Australian consumers, who have paid higher prices than would otherwise have been the case, have had limited choice of potato varieties and have endured poor product quality. The restrictions have also limited productivity growth in the industry. (ERAWA 2014, p. 316)

The ERAWA estimated that if the industry was deregulated consumers would benefit by around $43 million per year from lower prices (this equates to around $16.50 per person per year) (ERAWA 2014).

The statutory marketing of potatoes in Western Australia no longer serves the interests of consumers (as was originally intended by the Act) and has reduced the ability of the industry to respond to changes in consumer preferences. The Marketing of Potatoes Act serves the interests of some potato growers at the expense of consumers.

The operation of free markets would provide a more effective and efficient mechanism for meeting the changing preferences of potato consumers in Western Australia than the current statutory marketing arrangements. The Commission therefore supports the Western Australian Government's intention to deregulate the potato industry in Western Australia.

DRAFT FINDING 11.1

Statutory marketing of potatoes in Western Australia has reduced consumer choice and increased the price of potatoes in Western Australia. The Western Australian Government's plan to deregulate the industry will allow potato production in that state to respond to changing consumer preferences and reduce the cost of potatoes for consumers.

Reregulation of sugar marketing in Queensland

In 1902, Australia's sugar industry became the first industry in Australia to receive tariff protection as a precursor to the later development of a full system of statutory marketing. Prior to federation, the sugar industry had employed Melanesian labourers at wages lower than those received by labourers of European descent (Lloyd 1982). Tariff protection

(which raised domestic prices above export prices) was designed to compensate the industry for employing higher cost European labour. A Royal Commission in 1912 led to the development of a cane pricing formula to ensure an equitable distribution of profits between sugarcane growers and millers, and a modified version of this formula continues to be used today (SRRATRC 2015a).

Australia's sugar industry was deregulated in 2006. This followed more than 30 inquiries into the sugar industry between 1982 and 2006 (Australian Sugar Milling Council, sub. 68). These reviews revealed significant global changes in the operating environment and brought into question the efficiency and effectiveness of statutory marketing (Craigie 2014). Concerns grew that regulation had constrained investment and innovation, and that low adoption of new technologies had held back productivity and international competitiveness (QPC 2015). The need to improve productivity and competitiveness became even more critical in the 2000s as Brazil increased its production of sugarcane by a factor of ten, dominating world markets.

In December 2015, Queensland Parliament passed the *Sugar Industry (Real Choice in Marketing) Amendment Act 2015* (Qld), which reregulates the international marketing of Australian sugar. The potential regulatory impacts of the Act have been comprehensively reviewed by the Queensland Productivity Commission (QPC) (QPC 2015). This review was informed by the consultations and findings of a Senate inquiry into current and future arrangements for the marketing of Australian sugar (SRRATRC 2015a). It also coincided with the development of a sugar marketing code of conduct by a non-Parliamentary taskforce of senators and members from Queensland and New South Wales with an interest in the sugar industry.

The stated objectives of the Sugar Industry (Real Choice in Marketing) Amendment Act are to ensure that sugarcane growers can nominate who markets a significant proportion of the sugar milled from the cane that they grow and to provide mechanisms for dispute resolution.

The objectives of reregulating the Queensland sugar industry are contested. The QPC argued that the objectives read more like policy responses rather than policy objectives. Through extensive consultation, they sought clarification that the underlying goals of reregulating sugar marketing were something more like:

- to ensure a pricing framework where there is an appropriate balance of risk and reward between growers and millers
- to ensure that there are appropriate protections for growers and millers to prevent against the abuse of market power
- to ensure a regulatory framework that supports investment and innovation in the sugar industry and supports the long-term economic sustainability of the sugar industry. (QPC 2015, p. 36)

Many submissions to this inquiry (including by Canegrowers, sub. 22), as well as the QPC (QPC 2015) and a Senate inquiry (SRRATRC 2015a), stated that the objective of

sugarcane growers is to maintain transparent pricing mechanisms that lead to an equitable distribution of market premiums between themselves and millers. Transparent pricing is seen as a means of preventing transfer pricing if vertically integrated international agribusinesses dominate future marketing arrangements (QPC 2015). Grower confidence in the pricing practices of the not-for-profit and industry-owned Queensland Sugar Limited has meant that the goals of maintaining transparent and equitable pricing are frequently conflated with the goal of maintaining existing single-desk marketing arrangements.

The QPC found that the information that millers are proposing to provide sugarcane growers under new marketing arrangements from 2017 onwards:

> … appears to be comprehensive and would appear to provide the information that growers would need to form a view on whether the premiums that should be being paid to growers, is in fact being paid. It would also allow comparison of the premium and cost performance from year to year. (QPC 2015, p. 53)

The concern of sugarcane growers is the potential for millers to exercise monopsony power in setting sugarcane prices. Canegrowers, for example, stated that:

> In each of the sugarcane producing regions, the local cane growing community must deal commercially with a highly concentrated raw sugar miller. In most regions, a single company owns all mills in the district; there is no feasible alternative market for cane; and there are few if any worthwhile alternatives to sugarcane production within the farming system. With one exception, the mill owner is either a large multinational or linked to a large multinational in which Australian sugar accounts for a small part of their total business activities. There is a clear imbalance in economic strength favouring the milling company. (sub. 22, p. 8)

The QPC found that while a degree of distrust between growers and millers has made price negotiations difficult, this lack of trust is not in itself an indication of market failure. While some millers may have a degree of market power, the potential to exercise this power in price negotiations is offset by the co-dependency of mills on sugarcane growers in local supply areas. This co-dependency gives sugar growers an opportunity to organise and bargain collectively with millers (QPC 2015). Collective bargaining is used widely in the sugar industry to negotiate the terms of cane supply and related agreements (Canegrowers, sub. 22).

Consistent with the view of the QPC, the Australian Sugar Council considered that 'there was no evidence to support a case for market failure in the Queensland sugar industry, and that the benefits of the additional regulation did not outweigh the costs' (sub. 68, p. 2).

The Commission agrees that reregulation of the sugar industry is an inappropriate means of achieving the underlying policy goal of ensuring an equitable allocation of risk and return between growers and millers. Australia has comprehensive laws governing the misuse of market power (section 11.2), and the concentrated nature of the industry provides sugarcane growers with an opportunity to take advantage of the collective bargaining provisions in the *Competition and Consumer Act 2010* (Cwlth). The Commission notes the

potential for the types of mediation provided under codes of conduct in other industries to provide a low cost mechanism for resolving disputes over pricing.

Real choice in marketing?

While the Act passed by the Queensland Parliament is titled 'Real Choice in Marketing', it is likely to restrict competition (QPC 2015). Commenting on the passing of the Bill, the Queensland Government Department of Agriculture and Fisheries said:

> It was not supported by the Queensland Government due to likely negative impacts, which were identified in a regulatory impact assessment undertaken by the Queensland Productivity Commission … the amendments to the *Sugar Industry Act 1999* which commenced on 17 December 2015 authorise potential anticompetitive behaviour (in the form of enabling growers to force sugar mills to enter contracts with a sugar marketer of the grower's choice). (sub. 58, p. 7)

Grower ownership of a proportion of sugar throughout the value chain, even after this sugar has been sold to millers, is claimed to arise from the cane price formula established in 1915. The QPC found that:

> … there is no evidence that the Cane Price Formula or the concept of GEI [Grower Economic Interest] provides any form of legal title in the growers. (QPC 2015, p. ix)

In addition, the proportion of sugar attributed by the cane formula to grower economic interest is somewhat arbitrary and changes over time. For example, Dixon and Johnson (1988) estimated that by the 1980s, improvements in mill efficiency had reduced the proportion from around 66 per cent to more like 57 per cent. Changes to the formula have been ongoing, and its parameters vary by region.

The QPC found that millers should have the right to choose who markets the sugar they have bought from growers:

> … the growers are effectively asking to be given property type rights in a product which they do not own. A refusal by the owner of a product to give away property type rights in that product, does not constitute a misuse of market power as it is not of itself inherently unreasonable. (QPC 2015, p. 51)

The QPC found that the Act increases risk for millers, which is likely to 'make Queensland a less desirable investment destination, compared with other jurisdictions' (QPC 2015, p. 75). This risk is compounded by regional variability and changes over time in the cane price formula. An arbitrary appropriation of miller's property rights through the Sugar Industry (Real Choice in Marketing) Amendment is likely to discourage investment in milling, resulting in inefficiencies in mill capacity which will in turn lead to reduced productivity of sugar cane growing.

A related issue is that grower confidence in the ability of Queensland Sugar Limited to generate the best possible market premiums is untested. Prior to deregulation, the Queensland Sugar Industry and the Queensland Government signed a memorandum of

understanding that effectively retained Queensland Sugar Limited as the single-desk marketer of raw sugar exports. When the industry was deregulated, Queensland Sugar Limited entered into voluntary agreements with the majority of Queensland mills to continue to market their export raw sugar. Under the Raw Sugar Supply Agreements, which Queensland Sugar Limited has with each of the seven Queensland mill owners, millers supply 100 per cent of their raw sugar production, intended for bulk export, to Queensland Sugar Limited (QPC 2015).

This means that current marketing arrangements have not been subjected to the kinds of long-term competitive forces that have driven innovation and cost savings in other industries. Competition would enable claims by millers that they can generate higher premiums for growers through alternative marketing arrangements to be tested in the marketplace, and drive innovation.

There is some evidence emerging that reregulation of the sugar industry may be constraining sugar marketing. According to Wilmar, reregulation has forced milling companies into a complex redrafting process that is delaying the drafting of contracts with growers for the 2017 season (Webster 2016). This may constrain millers and growers from using forward selling to take advantage of the highest world sugar prices since 2012. However, grower organisations appear to attribute contracting delays to Wilmar (Webster 2016), rather than the costs imposed by the reregulation of sugar marketing.

Weighing up the costs and benefits

Organisations representing sugarcane growers argue that the benefits of reregulating the marketing of raw sugar include:

> … the discipline on businesses to continually strive to improve their performance, lift productivity growth and lower costs. Competition in the provision of marketing services will stimulate investment, economic growth and employment opportunities across the industry. (Canegrowers, sub. 22, p. 8)

In contrast, sugarcane millers argue that the Act:

> … will impose a raft of new costs to stakeholders across the supply chain and significantly limit the opportunity for innovation and flexibility that Australian industries competing in the world marketplace need to remain competitive. (Australian Sugar Milling Council, sub. 68, p. 2)

There is some evidence that the agreement between the industry and the Queensland Government to retain single-desk marketing arrangements (following deregulation in 2006) constrained structural adjustment and productivity growth in the sugar industry relative to other industries faced with similar challenges (box 11.1).

Past inquiries have noted a long history of the Australian sugar industry not taking advantage of scale economies (IC 1996). This was partly due to regulations limiting the

area of sugarcane that new farms could establish prior to deregulation (IC 1992). These limitations were removed in 2006.

The average size of sugarcane farms in Australia increased from 80 hectares in 1997-98 to 110 hectares in 2014-15 (ABS 2016a) This compares to 495 hectares in the United States in 2007 (USDA 2009). The Industry Commission cited research indicating cost savings of around 30 per cent from expanding farm area from 100 to 300 hectares (IC 1992). Valle and Martin (2015) found that most Australian sugarcane farms with an area of less than 125 hectares generate a negative rate of return on capital. In contrast, sugarcane farms with greater than 250 hectares generated a rate of return comparable to farms in the grains industry with similar total capital investment.

Valle and Martin (2015) also found that:

- 40 per cent of sugarcane growers intend to maintain the current size of their farm over the next five years
- around 12 per cent indicated that they expected to expand their sugarcane area. This was higher for larger farmers (28 per cent) and for farmers in the more productive regions of north Queensland (13 to 16 per cent)
- around 22 per cent of farmers planned to either retire or sell their farm in the next five years
- 11 per cent of farmers planned to reduce their sugarcane area.

Box 11.1 Structural adjustment in the sugar and dairy industries

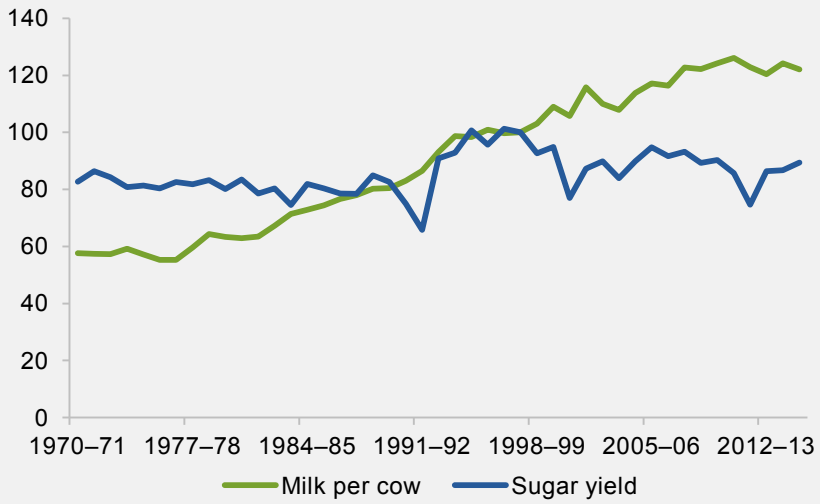
The sugar and dairy industries have similar structural characteristics. Both are regionally concentrated, highly intensive agricultural land uses and both have had a long history of market regulation. The dairy industry was deregulated in 2000, and the industry worked closely with Australian governments on a program of structural adjustment. In contrast, the sugar industry was deregulated in 2006, but the majority of Queensland mills continue to market their raw sugar exports through the single-desk marketing arrangements.

In the dairy industry, milk yields per cow have increased by 25 per cent since 1997-98, while yields of sugar have fallen by 10 to 15 per cent over the same period.

Productivity growth in the Australian dairy industry has been highest in regions that have undergone the most structural adjustment (Ashton et al. 2014, p. i). The total number of dairy farms fell by 46 per cent between 1997-98 and 2010-11 compared to 32 per cent for sugarcane farms. The decline in the number of dairy farm was accompanied by much greater consolidation of farm sizes, with the number of farms with an area of less than 99 hectares falling by 58 per cent compared with 38 per cent in the sugar industry.

Yield

Index 1997-98 = 100

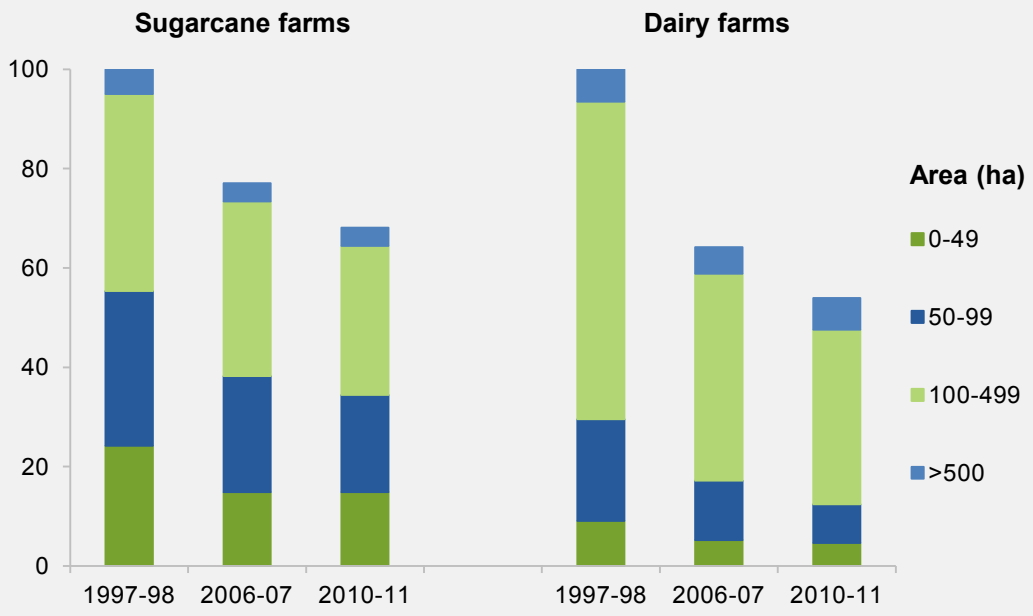


(Continued next page)

Box 11.1 (continued)

Area

Index 1997-98 = 100



Sources: ABARES (2015a); ABS (*Agricultural Commodities, Australia, 2014-15,* Cat. no. 7121.0).

Current proposals by sugar millers to seek higher premiums for growers through alternative marketing options are consistent with the goals of deregulation and competition policy generally (QPC 2015). Alternative marketing arrangements may attract premiums by providing products and marketing services tailored to new and emerging markets in which each marketer has a competitive advantage. Higher premiums could provide incentives for profitable restructuring of the sugarcane industry, enabling the owners of less efficient farms to leave the industry with financial security, while creating larger, more productive and profitable sugarcane farm businesses.

Reregulating the Queensland sugar industry will limit the competitive forces driving innovation and productivity growth in sugarcane farming. It is also likely to constrain innovation in marketing and continue to limit the premiums available to sugarcane growers.

The Commission's view is that costs of the Sugar Industry (Real Choice in Marketing) Amendment Act outweigh the benefits. Repealing the Act could enable consolidation and productivity gains which would enhance the international competitiveness of the sugar industry.

DRAFT RECOMMENDATION 11.2

The Queensland Government should repeal the amendments made by the *Sugar Industry (Real Choice in Marketing) Amendment Act 2015*.

11.2 Competition law

Australia's core competition law provisions are contained in the *Competition and Consumer Act 2010* (Cwlth) (CCA). The objective of the CCA is to 'enhance the welfare of Australians through the promotion of competition and fair trading and provision for consumer protection'. The Australian Competition and Consumer Commission (ACCC) is responsible for ensuring compliance with, and enforcement of, the CCA.

Competition law can increase economic efficiency by discouraging firms from interfering with the competitive process. It can also provide a degree of certainty about whether certain types of practices are acceptable.

As discussed earlier, farm businesses continue to be concerned about an imbalance in bargaining power and inefficient or unfair commercial outcomes. For example, the NSW Farmers' Association said that:

> In the case of agriculture, there is an existing imbalance between participants in the supply chain. (sub. 72, p. 39)

The NSW Farmers' Association also indicated that the consolidation of the red meat processing, grain transport and horticultural industries have made farm businesses in these markets particularly susceptible to the misuse of market power.

The Australian Dairy Farmers expressed similar concerns in the context of dairy farm businesses.

> Fluctuations in input costs, the impact of climatic variations, limitations in infrastructure and the perishable nature of produce leave some farmers in an economically vulnerable position operating under extremely tight margins. These market factors result in imbalances between participants in the supply chain. (sub. 63, p. 9)

Collective bargaining and boycotts

In general, section 45 of the CCA prohibits arrangements that substantially lessen competition. However, it also authorises exemptions that allow small businesses to bargain collectively with larger businesses and to strategically use boycotts as part of these negotiations (box 11.2).

Box 11.2 Collective bargaining and boycotts

Collective bargaining is an agreement by two or more competitors to negotiate with a supplier or a customer over terms, conditions and prices. A group of businesses may sometimes appoint a representative, such as an industry association, to act on its behalf in the negotiations.

A *collective boycott* occurs when a group of competitors agree not to acquire goods or services from, or not to supply goods or services to, a business with whom the group is negotiating, unless the business accepts the terms and conditions offered by the group.

Exemptions — in some circumstances, allowing collective arrangements may be in the public interest. The Act allows protection from legal action to be granted to parties to engage in anti-competitive conduct, including collective bargaining and boycotts, when there are public benefits that would outweigh the detriments to competition.

There are two ways that businesses can obtain an exemption from the competition provisions of the Act for collective arrangements — authorisation and notification.

Source: ACCC (2011).

As noted by the ACCC:

> … small businesses are often more likely to be heard on terms and conditions if they join with other small businesses to collectively negotiate with a larger business, rather than one-on-one. However, negotiating collectively may breach the [CCA]. (2011, p. i)

The ACCC (2014b) also said that collective bargaining can provide benefits by overcoming information asymmetries, reducing the time and transaction costs associated with establishing supply agreements, and strengthening bargaining power.

To take advantage of these benefits, small businesses can apply to the ACCC for an exemption to engage in collective bargaining and/or collective boycotts through the authorisation or notification provisions of the CCA. For most sectors, collective bargaining is allowed if the annual value of transactions affected is less than $3 million.

Adoption is low among farm businesses

A number of participants said that collective bargaining is an important tool for addressing bargaining power imbalances (Australian Dairy Farmers, sub. 63; AgForce, sub. 17; NFF, sub. 61). Canegrowers (sub. 22), for example, reported that collective bargaining is used in the sugar industry to negotiate the terms of cane supply to the mills. However, the ACCC's 'authorisations & notifications' register reveals that exemptions to section 45 have only

been approved eight times for five small groups of farmers in the citrus, chicken and dairy industries (ACCC 2016b).

The low adoption of exemption provisions is probably not surprising as there are only a limited group of farmers that operate with similar conditions and levels of productivity and profitability. And it is under these conditions that there will be an incentive for them to bargain collectively.

However, some participants argued that amendments could be made to section 45 of the CCA to improve competition. The NFF, for example, said that:

> … there are opportunities to amend certain regulations placed on collective bargaining, which in doing so will enhance competition within the market place. (sub. 61, p. 28)

The Australian Chicken Growers' Council (sub. 51) noted that under the current arrangements there is no requirement for either party to engage in the negotiation process, and a group of growers cannot compel the processor to enter into negotiations. The Council recommended a provision in the authorisation process that requires all parties to participate in collective negotiation.

Calls for section 45 of the CCA to be amended, based on the low adoption of collective bargaining by small businesses, are not new. In 2007, the Australian Government increased the threshold for the primary production industry to $5 million (ACCC 2011).

In its submission to the Competition Policy Review (the Harper Review), the ACCC said that 'deficiencies in the current collective boycott notification provisions may be deterring bargaining groups from seeking an exemption for efficiency-enhancing conduct' (2014b, p. 109). It recommended amendments that would provide the ACCC with more flexibility in the way it assesses proposals for boycotts, and that would provide bargaining groups with more flexibility in submitting proposals.

The Harper Review found a low level of awareness of the collective bargaining provisions and recommended that the notification process for collective bargaining be enhanced to improve small business awareness, and that the CCA be reformed to introduce greater flexibility in the notification process for collective bargaining. The Harper Review also recommended that the current maximum value thresholds for a party to notify a collective bargaining arrangement be reviewed to ensure that they are high enough to include typical small business transactions (Harper et al. 2015).

The Agricultural Competitiveness White Paper also partly attributed low adoption to low levels of awareness of the collective bargaining provisions among small businesses. The Agriculture Competitiveness White Paper, for example, said that:

> Farmers are asking for more information about cooperatives and other innovative business models to assist them to strengthen their financial position, be more attractive to investors, improve their bargaining position and operate beyond the farm gate. (Australian Government 2015a, p. 31)

The Australian Government supported the Harper Review's recommendation of raising awareness by committing $13.8 million to a two-year pilot program to provide farmers with knowledge and materials on collective bargaining, cooperatives and innovative business models. The Agriculture Competitiveness White Paper stated that the 'information will help to counter-balance retailer and processor market power and achieve fairer farm gate prices' (Australian Government 2015a, p. 31).

Why is there low adoption of collective bargaining by farm businesses?

A challenge for all industries, including agriculture, is that larger, more efficient businesses have an incentive to negotiate more favourable terms than the 'pooled' average returns achieved by collective bargaining (Lewis 1967). Low adoption of collective bargaining provisions may not mean that there are barriers to the use of exemption provisions. It could simply reflect that the economic incentives for collective bargaining are more than offset by incentives for larger and more efficient businesses to negotiate their own terms. Dealing with fewer, larger farm business may also improve the ability of wholesale merchants and retailers to meet consumer preferences for consistent and timely supply, resulting in benefits to consumers (Baker and Graber-Lützhøf 2007).

Whether or not amending section 45 will promote the adoption of collective bargaining in the agricultural sector also depends on the predisposition of Australian farmers to participate in cooperatives and other commercial corporate entities. Keogh (2013) noted that one of the interesting features of Australian agriculture is the limited presence of farmer-owned cooperatives in the agribusiness environment in Australia compared to other countries. Keogh reviewed a range of theories that have been put forward to explain this, including:

- Australian farm businesses bear more financial risk due to lower levels of government subsidies and are therefore less willing to share profits through cooperatives[54]
- Australian farm businesses require more capital to bear the high risk associated with exposure to export markets, and therefore are less willing to contribute capital to cooperatives
- Australian farmers tend to live on large and sometimes remote farms, rather than living in villages and travelling out to their farm each day (attracting more self-sufficient people who are less comfortable in a cooperative structure)
- a long history of statutory marketing arrangements makes Australian farmers less willing to participate in cooperatives.

Regardless of the merit of each theory, there appears to be a cultural aversion in Australia to participating in cooperatives, and this may reduce the adoption of collective bargaining in the agricultural sector.

[54] An argument that seems to overlook the risk pooling benefits of cooperatives.

The Commission questions whether the suggested amendments to section 45 of the CCA will result in more farm businesses engaging in collective bargaining. Overall, the evidence suggests that the exemptions in section 45 allowing collective bargaining are only likely to benefit small groups of farm businesses with similar characteristics. The current use of these exemptions by small groups of farm businesses in the citrus, chicken, and dairy industries may therefore indicate that these provisions are working reasonably well in the agricultural sector.

Section 46 and an effects test

Section 46 of the CCA prohibits corporations that have a substantial degree of market power from taking advantage of that power for the purpose of eliminating or substantially damaging a competitor, preventing the entry of a person into a market, or deterring or preventing a person from engaging in competitive conduct.

Section 46 defines conduct as a misuse of market power if it satisfied two legal tests:

- First, the conduct must have involved taking advantage of the firm's market power.
- Second, the conduct must have been undertaken for the purpose of eliminating or substantially damaging a competitor, preventing the entry of a person into a market, or deterring or preventing a person from engaging in competitive conduct.

The Harper Review recommended that section 46 of the CCA be amended to target anticompetitive conduct that has the *effect* of damaging competitive processes. A key recommendation was to amend the CCA to include an effects test to:

> … prohibit a corporation that has a substantial degree of power in a market from engaging in conduct if the proposed conduct has the purpose, or would have or be likely to have the effect, of substantially lessening competition in that or any other market (Harper et al. 2015, p. 348).

In March 2016 the Australian Government announced its intention to amend section 46 by replacing the 'purpose' test with an 'effects' test (Turnbull, Morrison and O'Dwyer 2016).

Competition is for the benefit of consumers

The Harper Review (2015) stated that regulations that deal with anticompetitive conduct are a necessary part of competition law, particularly given that the small size of the Australian economy often leads to concentrated markets. The purpose of section 46 is to protect against conduct that damages competitive processes in markets, rather than to protect competitors from the effects of competition:

> … competition law is not concerned with harm to individual competitors. Indeed, harm to competitors is an expected outcome of vigorous competition. Competition law is concerned with harm to competition itself — that is, the competitive process … It would not be sound policy to prohibit unilateral conduct that had the effect of damaging individual competitors. (Harper et al. 2015, p. 339)

The ACCC also stated that section 46 of the CCA 'is a crucial component of Australia's competition law', noting that the High Court of Australia 'has described the object of section 46 as being to protect the interests of consumers and that competition is a means to that end' (2014b, p. 76).

The NFF also acknowledged that the provisions should not be about protecting individual competitors:

> Reforming misuse of market power provisions should be about protecting the competitive process, rather than protecting individual competitors. A truly competitive market, where companies succeed and fail as a result of merit, not as a consequence of dominant companies misusing market power, will best foster innovation and growth. Such innovation and growth will ultimately best serve the interests of the community. (sub. 61, p. 29)

In agricultural markets, consumer interests are served by competitive forces that improve the quality and lower the cost of food. An inquiry by the ACCC (2008) found that there was intense competition between supermarkets in retail grocery markets. The Harper Review (2015) found that this competition had intensified in recent years.

Farm businesses are largely input suppliers to wholesale merchants and supermarkets, rather than competitors in retail grocery markets. Intense competition in retail markets makes the productivity and profitability of wholesale merchants and supermarkets critically co-dependent on the productivity and profitability of input suppliers throughout the value chain, especially farm businesses. This co-dependence means that the competitiveness of wholesale merchants and supermarkets depends on their ability to pass on the competitive pressures that drive innovation, productivity and cost savings to farm businesses.

Some competition law experts argue that pressure to amend section 46 is based partly on wanting to shield small businesses from competition. For example:

> Section 46 is designed to ensure those with market power don't use it to insulate themselves from competitive pressure; but s46 shouldn't be used to insulate small business … (Trindade, Merrett and Smith 2013, p. 6)

The introduction of an 'effects' test to section 46 is unlikely to shield farm businesses from intense competition in retail grocery markets. Shielding farm businesses from competition would also not be in the interest of consumers.

Evidentiary burden of the purpose test

Some have argued that the evidentiary burden of the purpose test is too high. The ACCC, for example, in its submission to the Harper Review argued that section 46 'is of limited utility in prohibiting conduct by firms with substantial market power which has a detrimental impact on competition' (ACCC 2014b, p. 76). This was partly attributed to the burden of evidence necessary to prove that the intention or purpose of the commercial conduct in question was to lessen competition (ACCC 2014b).

The Harper Review concluded that section 46 could be reframed to 'improve its effectiveness in targeting anti-competitive unilateral conduct and focus it more clearly on the long-term interests of consumers' (Harper et al. 2015, p. 61). The review found that the 'take advantage' limb of section 46 is not a useful test by which to distinguish between competitive and anti-competitive unilateral conduct and noted that:

> The test has given rise to substantial difficulties of interpretation, which have been revealed in the decided cases, undermining confidence in the effectiveness of the law. (Harper et al. 2015, p. 338)

A number of participants indicated that they supported replacing the existing purpose test with an effects test. The NFF said it would 'shift the onus of consideration from what a company's purpose of conduct was, to what effect that conduct had on any given marketplace' (sub. 61, p. 29). Similarly, Canegrowers supported an effects test for section 46 on the basis that it shifts the burden of evidence from proving the intended purpose of anticompetitive behaviour to its impact on markets. Canegrowers suggested that giving the ACCC greater power to regulate anticompetitive behaviour would:

> … shift the decisions framework from the judicial system to a regulatory system, making it more accessible to small producers facing large multinational adversaries. (sub. 22, p. 9)

Canegrowers comments were directed at the relationship between sugarcane farms and sugar mills, and the potential for sugar mills to take advantage of their regional milling monopsony power to eliminate or substantially damage Queensland Sugar Limited.

> … the provisions of section 46 do not adequately deal with cases where there are significant imbalances in market power between different segments of a supply chain as occurs between sugarcane growers and the mill they supply and where the use of that market power has the likely effect of substantially lessening competition. (sub. 22, pp. 9–10)

It also said that there is a:

> … role for government … to restore balance in the market for sugarcane and to establish a regulatory structure that prevents the misuse of market power, addresses market failure, and ensures cane growers are not disadvantaged by the mills they supply. (sub. 22, p. 10)

The NSW Farmers' Association supported the introduction of an effects test to address an imbalance of market power between participants in the supply chain.

> In the case of agriculture, there is an existing imbalance between participants in the supply chain. When parties with market power engage in unilateral conduct that discriminates against their competitors, the discrimination may be subtle and difficult to clearly distinguish from legitimate business conduct; however, due to the structure of the market, the conduct would still have a substantial impact on competition. (sub. 72, p. 39)

In contrast, the Pastoralists and Graziers Association of WA noted that:

> … markets can be tough, unpleasant and difficult places in which to operate. Competition should be judged on the bases of efficiencies and capacity, and a failure to compete should not be protected by legislation. … Legislative protection should only be invoked when companies

(or individuals) are using their market power to engage in malicious activities that are anti-competitive. (sub. 70, p. 10)

Co-operative Bulk Handling Limited (CBH) suggested that the proposed changes to section 46 could increase uncertainty and the cost of operating cooperative bulk handling of grain in Western Australia.

There is a risk that CBH's efficiency enhancing behaviours, for the benefit of increasing growers' export capacity and competitiveness in the global market, are likely to be captured as unintended consequences. (sub. 36, p. 11)

As a result, it contended that:

… there are existing measures that could be utilised before there is a requirement for change in section 46. However, if changes are required to be implemented then care must be taken to ensure efficiency driven behaviours such as those implemented by CBH in the best interest of growers in Australia are not penalised as an unintended consequence. (sub. 36, p. 11)

And competition law experts have raised concerns that an effects test would not be any more objective and therefore easier to prove than a purpose test because:

Observing injury to competitors in the marketplace tells you nothing about whether this has occurred as a result of competition that will ultimately benefit consumers or because there has been a misuse of market power that will harm consumers. (Trindade, Merrett and Smith 2013, p. 6)

The Commission has previously noted that a high evidentiary burden is not sufficient to justify amending section 46 (PC 2014f). Further, amending the regulation to include an effects test may itself bring regulatory risks, particularly if the threshold invoking the test was set too low.

The wrong focus?

Competition policy reform has contributed significantly to agricultural productivity in Australia by enabling the reallocation of land, labour and capital to their highest value uses both within and between farm businesses (Gray, Oss-Emer and Sheng 2014). The current debate about imbalances in bargaining power overlooks the co-dependence of businesses along agricultural value chains. There are potential benefits from shifting the focus from potential misuse of market power by wholesale merchants and supermarkets to innovations that develop new commercial arrangements and enable farm businesses to participate profitably in globalised value chains.

11.3 Industry codes of conduct

There are two industry codes of conduct affecting agricultural marketing in Australia. In horticulture, residual concerns about transaction costs for small fruit growers arising from the information advantage of wholesale merchants led to the development of a mandatory code of conduct in 2007. A related code of conduct regulates supply agreements between farmers and supermarkets.

Despite the ACCC's (2008) inquiry finding little evidence of anticompetitive behaviour in supermarket supply chains, concerns have persisted among agricultural industries. In particular, farmers remain concerned about the ability of supermarkets to transfer risk through arbitrary changes to supply agreements.

In December 2014, the Federal Court found that Coles Supermarkets Australia Pty Ltd had engaged in unconscionable conduct with some suppliers in 2011 (ACCC 2014d). In response, the industry has worked with government to develop a Food and Grocery Code of Conduct in consultation with the major supermarkets and other stakeholders (Treasury 2014b).

Food and Grocery Code of Conduct

The Food and Grocery Code of Conduct is administered by the ACCC under the CCA (ACCC 2015e). The intention of the Code is to ensure that the concentration of the grocery retail sector does not lead to anticompetitive conduct by supermarkets and wholesalers in the supply agreements they negotiate with farms and other businesses. The Code also provides a mechanism for raising and resolving disputes, but as discussed below, this mechanism is different to other codes in operation.

While the Code is voluntary, voluntary codes prescribed under the CCA have the same enforcement provisions as mandatory codes (ACCC 2014b). Although there are no financial penalties for a breach of the code, other forms of redress are available including court-ordered injunctions, and compensation for loss or damage caused by conduct in setting and varying supply agreements (ACCC 2015c). Conduct that breaches the Code may also breach the unconscionable conduct provisions of the Australian Consumer Law, which imposes financial penalties.

The Code in its current form is relatively new. Australia's three major supermarkets opted into it in mid-2015. In mid-2015, the Australian Government announced it would allocate $11.4 million to the ACCC for an Agricultural Enforcement and Engagement Unit. A Commissioner dedicated to agricultural markets was appointed in February 2016.

To date there have been few formal applications of the Food and Grocery Code of Conduct. An ongoing issue has been a lack of documented evidence of unconscionable conduct by supermarkets, and that this conduct is a result of the systematic misuse of market power.

A comprehensive grocery sector inquiry by the ACCC found that even though the sector is concentrated, grocery retailing was 'workably competitive', and that there was nothing 'fundamentally wrong with the grocery supply chain' (2008, p. xiv). It also found no systematic evidence of market power being exercised as unconscionable conduct in supply agreements for fresh food. The Commission has not received any new evidence showing exercise of market power through unconscionable conduct by supermarkets, and no specific evidence was cited in the Agricultural Competitiveness White Paper.

A consultation paper by Treasury indicated that this lack of evidence may be partly due to a fear of retribution:

> … some suppliers may have little choice but to accept particular terms for fear of losing contracts, and may similarly be unwilling to complain to the supermarkets, or other bodies to resolve issues or enforce their legal rights during the life of the agreement for fear of retribution (Treasury 2014b, p. 4)

Without clear evidence showing the exercise of market power, and its costs to consumers, the Commission agrees with Treasury that the goal of this type of regulation should not be to:

> … prevent hard bargaining and vigorous competition, but rather, to ensure that market distortions do not compound and have a longer-term detrimental impact on consumers or the grocery sector more broadly. (2014b, p. 7)

The NFF (sub. 61) supported the goal of the Code in seeking to provide a more formal, open and transparent process for supermarkets to negotiate supply agreements. The Voice of Horticulture (sub. 42) supported the appointment of an ACCC Commissioner dedicated to agriculture, and recommended the focus be on improving transparency in supply agreements.

In October 2015, the ACCC raised concerns that some supermarkets were presenting grocery supply agreements in ways that might suggest that they were non-negotiable (ACCC 2015g). The ACCC also questioned whether existing supply agreements provided suppliers with sufficient detail about terms and conditions. Following the ACCC raising these issues, the supermarkets concerned wrote to their suppliers to make clear that the agreements are negotiable, and to clarify their terms.

The NFF (sub. 61) suggested that the Code has a number of shortcomings. These include concerns about the voluntary opt-in nature of the Code, and whether it should apply to a broader set of retailers. The NFF has also previously raised the potential for an independent Commissioner to assist in dispute resolution and to help overcome any under reporting due to the fear of retribution (2014b).

The cost of administering the Code includes the cost of establishing the Agricultural Enforcement and Engagement Unit to conduct investigations (ACCC 2016a). The costs of dispute resolution under the Code are difficult to predict and will depend on the number and nature of disputes that arise. However, the Food and Grocery Code of Conduct could

be expected to involve higher mediation costs than other similar industry codes. This is because similar codes in the horticulture, oil and franchising industries are serviced by a mediator (the Accord Group) centrally contracted by the Australian Government.

The benefits of the Code will come from achieving a balance between reduced transaction costs for small input suppliers, and maintaining the commercial flexibility of major supermarkets to choose the lowest cost suppliers. Treasury (2014b) said that voluntary codes of conduct promote desirable conduct while not unduly restricting the commercial flexibility of retailers.

It is too early to tell whether the Food and Grocery Code of Conduct is working as intended.

Horticulture Code of Conduct

The Horticulture Code of Conduct is a prescribed, mandatory industry Code under section 51AE of the CCA. The objectives of the Code are to:

- regulate trade in horticultural produce between growers and traders, to ensure transparency and clarity of transactions
- provide a fair and equitable dispute resolution procedure for disputes arising under the Code or a horticultural produce agreement.

The Code seeks to ensure transparency and clarity of transactions by requiring:

- parties to trade under written agreements (horticulture produce agreements)
- that traders (who may be agents or merchants) publish their terms of trade and only trade as either an agent or a merchant under one horticulture produce agreement
- particular minimum terms to be included in a horticulture produce agreement.

The Code was developed with the aim of addressing information asymmetries and bargaining power imbalances in the horticulture industry (ACCC 2015a).

In 1999, a Joint Select Committee on the Retailing Sector recommended a mandatory code of conduct to deal with systemic and ongoing problems in business dealings between major supermarket chains, small retailers and farm businesses (JSCRS 1999).

Part of the Australian Government's response to the 1999 inquiry was a voluntary Retail Grocery Industry Code of Conduct. This was broadened in 2005 to become the Produce and Grocery Industry Code of Conduct to better reflect its scope within the industry (Napper and Wein 2015). Industry dissatisfaction with the voluntary operation of the code led to calls to make it mandatory:

> Calls for a mandatory code were based on the fact that the [Produce and Grocery Industry Code of Conduct] did not require signatories to enter written contracts to evidence terms and conditions of supply, and did not enable one party to require another to participate in the mediation of a dispute. (Napper and Wein 2015, p. 63)

The Horticulture Code of Conduct became operational in 2007, but did not apply retrospectively to supply agreements that were already in place (Napper and Wein 2015). The Horticulture Code differs from the Food and Grocery Code in that its focus is the relationship between farm businesses and traders in the wholesale market, rather than farm businesses and retail supermarkets.

The Horticulture Code of Conduct includes funding for independent mediation that provides low cost dispute resolution for participants (similar mediation services are provided for the franchising and oil industry codes of conduct).

A recent review of the Horticulture Code of Conduct by Napper and Wein (2015) found that many aspects of the horticulture industry's trading arrangements have changed since the code commenced in 2007. Growers are increasingly trading directly with supermarkets and other retailers, and technological changes have allowed for greater transparency, improved communication on quality issues and the opportunity to improve price reporting.

Napper and Wein (2015, pp. 47–48) found that neither growers nor traders considered the Horticulture Code to be achieving its aims, but for different reasons:

- growers reported that the code 'fails to address the issue of transparency' in market transactions
- traders reported that the code is 'inflexible and does not reflect the way the wholesale horticulture sector operates'.

A lack of understanding of how the Horticulture Code of Conduct operates was also found to limit the Code's effectiveness and cause industry stakeholders to disengage from the Code.

In addition, the review found that the Horticulture Code of Conduct is rarely used by industry to resolve disputes:

> … the Horticulture Code's current dispute resolution mechanism is irrelevant, inappropriate and largely not adopted by parties in the horticulture sector. In general, growers believe that the low uptake of the code's dispute resolution mechanism is due to a fear of retribution, whereas central markets contend that the reason for low uptake is that there are few disputes. Further, it is widely believed that the dispute resolution mechanisms prescribed by the code does not address the majority of disputes that arise in the course of what appears to be acceptable market practice in the horticulture sector. Most disputes are related to the issues of the quality and timing of the delivery of produce, payments to growers, and the transparency of prices (Napper and Wein 2015, p. 2)

The Voice of Horticulture (sub. 42) restated the growers' perspective that the Code is ineffective in improving transparency, and supported strengthening the Code and merging it into the Food and Grocery Code of Conduct.

The NFF also said that the code 'has failed to adequately address the key issue of transparency across the supply chain' and recommended strengthening the code 'through

its enforcement and dispute resolution provisions, ensuring all contracts are covered by the Code, and harmonising provisions with the Food and Grocery Code of Conduct' (sub, 61, p. 29).

The Napper and Wein (2015) report recommended a number of amendments to the Horticulture Code, including:

- the introduction of an obligation on growers and traders covered by the Code to act in good faith
- the removal of the distinction between agents and merchants
- the introduction of civil penalties and infringement notices
- improved dispute resolution services.

It was also recommended that the amended Horticulture Code should be accompanied by an education campaign to assist in its implementation.

The report acknowledged, however, that the proposed amendments to the Horticulture Code may increase the overall regulatory burden within the sector due to further compliance requirements. The question is whether the costs of the Code (which also include the cost of administering and enforcing the Code and the costs of dispute resolution services) are likely to be outweighed by the benefits of amending the Code in terms of increased trust and transparency of commercial transactions and improved dispute resolution services.

The Australian Govenrment is currently considering the recommendations of the review of the Horticulture Code of Conduct.

DRAFT FINDING 11.2

Existing competition regulation and oversight is adequate for managing the risk of supermarkets abusing market power in their dealings with farm businesses and wholesale merchants.

Suggestions to amend exemptions that allow collective bargaining under section 45 of the *Competition and Consumer Act 2010* (Cwlth) are unlikely to increase collective bargaining by farm businesses.

12 Foreign investment in agriculture

Key points

- Foreign investment has been, and will continue to be, important for improving the competitiveness and productivity of the Australian agricultural sector.
- Despite the benefits of foreign investment to the agricultural sector (and the economy), it has attracted considerable public attention over recent years. Public surveys show that many Australians are concerned about foreign investment, particularly foreign investment in agriculture. Many of the concerns are misplaced and appear to have arisen partly due to a lack of information and informed debate about foreign investment in agriculture.
- Changes in 2015 to Australia's foreign investment review framework (which aims to balance the benefits of foreign investment against any potential risk to Australia's national interest) significantly lowered the screening thresholds that trigger review of foreign investment proposals by the Foreign Investment Review Board for the agricultural sector.
- There is a risk that the lower thresholds (combined with different thresholds depending on the country of origin of the investor) will increase the cost and complexity of investing in Australian agriculture — ultimately deterring foreign direct investment in the sector — without offsetting public benefits. The lower thresholds are inimical to the long-term interests of farmers and the broader community.
- The Australian Government should raise the screening thresholds for foreign investment in agricultural land and agribusiness to $252 million — in line with the thresholds that applied to agriculture prior to 2015, and those that currently apply to business acquisitions and developed commercial land.
- Application fees for foreign investment proposals in agriculture should be based on the Foreign Investment Review Board's cost of processing applications (and no higher). Fees should be closely monitored to ensure no over- or under-recovery of costs.
- Transparency regarding the Treasurer's decisions on foreign investment proposals (to the extent that is consistent with national interest considerations) is important as a means of providing information to the public about foreign investment in agriculture.
- The Register of Foreign Ownership of Agricultural Land should go some way towards increasing transparency and addressing public concerns about foreign investment in agriculture — although this depends on the content of the reports published by the Australian Tax Office (based on the register).

Australia has a long history of welcoming foreign investment because of the important and beneficial role it plays in the Australian economy. As the Treasurer, the Hon. Scott Morrison MP, said recently:

> Foreign investment has underpinned the development of our nation and we must continue to attract the strong inflows of foreign capital that our economy requires. Without foreign capital

> and investment, Australia's output, employment and standard of living would all be lower. (2016b, p. 3)

And back in 2009, former Treasurer, the Hon. Wayne Swan MP, said that:

> We want to ensure Australia's regulatory framework promotes our competitiveness and attractiveness as a destination for international capital. Our mission is to compete globally more effectively — to take a larger slice of a currently smaller pie … (Swan 2009)

Foreign investment has been critical to Australia's economic development throughout its history; domestic investment opportunities have consistently exceeded domestic savings. As the Reserve Bank of Australia's Assistant Governor (Financial Markets), Guy Debelle, said:

> The Australian economy has been a net recipient of capital inflows from the rest of the world for almost all of its history … Put differently, investment in the Australian economy has consistently exceeded domestic saving and this gap has been funded from offshore.
>
> … In Australia's case, foreign investment has been attracted by the favourable risk-adjusted returns on offer here and has helped to expand our domestic productive capacity. (Debelle 2014)

However, foreign ownership of Australian agricultural land and agricultural businesses has attracted substantial public attention in recent years. A number of high-profile agricultural investments — including the proposed sale of the S. Kidman and Company Limited group of properties to a Chinese-led consortium and the sale of Australia's biggest dairy farm business, Tasmania's Van Diemen's Land Company (which has never been Australian–owned), to a Chinese company (Moon Lake Investments) — have renewed public debate about the role and regulation of foreign investment in Australian agriculture.

In May 2015, the Australian Government announced a package of measures aimed at 'strengthening' Australia's foreign investment review framework (Hockey and Abbott 2015). The package included measures to increase scrutiny of agricultural investment by lowering the screening threshold (that is, the threshold that triggers an examination of foreign investment proposals by the Foreign Investment Review Board) and to improve transparency through a register of foreign ownership of agricultural land. Concerns were raised in this inquiry about the new arrangements and the potential impact of the changes on foreign investment in the sector.

This chapter looks at the regulation of inward foreign investment in Australia, with a focus on the agricultural sector (section 12.1), and the importance of foreign investment to the Australian economy and the agricultural sector (section 12.2). It also examines the new foreign investment arrangements for agriculture in terms of what they seek to achieve, how effective they are and what costs they impose (section 12.3). Community concerns about foreign investment in agriculture (and what lies behind them) are also discussed.

12.1 About Australia's foreign investment framework

Australia's foreign investment review framework consists of the *Foreign Acquisitions and Takeovers Act 1975* (Cwlth) (FATA), the *Foreign Acquisitions and Takeovers Fees Imposition Act 2015* (Cwlth), associated regulations and Australia's Foreign Investment Policy (the Policy), which guides the Australian Government's decision-making process for foreign investment proposals.

The framework allows the Treasurer to review foreign investment proposals on a case-by-case basis to ensure they are not contrary to Australia's national interest. The Treasurer can make an order to prohibit a proposed foreign investment that is contrary to the national interest, or impose conditions on an investment on national interest grounds.

The Foreign Investment Review Board (FIRB) is a non-statutory body in the Treasury portfolio primarily responsible for examining foreign investment proposals that are subject to the FATA, the Policy and associated regulations, and advising the Treasurer and the Government on the Policy and its administration (FIRB 2016a). The FIRB only provides advice. The Treasurer has final responsibility for making a determination of all foreign investment proposals that fall within the foreign investment review framework. Commenting on its role, the FIRB stated that:

> The Board recognises that foreign investment is integral to Australia's economy and takes seriously the need to ensure that foreign investment proposals are consistent with Australia's national interest. The Board reviews foreign investment proposals against the national interest on a case-by-case basis and seeks to strike an appropriate balance between maintaining community confidence in foreign investment, protecting the national interest and ensuring that Australia remains an attractive destination for foreign investment by providing certainty for investors. (FIRB 2015c, p. 1)

Australia's foreign investment review framework aims to balance the benefits of foreign investment against the potential risk such investment might pose to the national interest (Treasurer 2016). 'National interest' is not defined in the FATA or its associated regulations; however, the FATA confers upon the Treasurer the power to decide whether a particular investment would be contrary to the national interest. The Policy guides the interpretation and application of Australia's 'national interest' by outlining the factors typically considered by the FIRB and the Treasurer when assessing foreign investment proposals (Treasurer 2016). They are:

- national security
- competition
- other Australian government policies, including taxation
- the impact on the economy and the community
- the character of the investor.

For foreign investment proposals in the agricultural sector, the following factors are also typically considered:

- the quality and availability of Australia's agricultural resources, including water
- land access and use
- agricultural production and productivity
- Australia's capacity to remain a reliable supplier of agricultural production, both to the Australian community and its trading partners
- biodiversity
- employment and prosperity in Australia's local and regional communities.

From 2015, all private (non-government) foreign investors in the agricultural sector have been subject to lower screening thresholds — $15 million for agricultural land (which is cumulative and not indexed) and $55 million for agribusiness[55] (which is not cumulative and is indexed). These thresholds do not apply where special arrangements have been negotiated under preferential trade agreements, which include higher or otherwise more liberal screening thresholds (table 12.1).

- The threshold of $1094 million for both agricultural land and agribusiness (which is not cumulative and is indexed) applies to private investors from the United States, New Zealand and Chile.[56]
- The agricultural land threshold for private investors from Thailand and Singapore is $50 million (which is not cumulative and not indexed).
- In recent preferential trade agreements with South Korea (which entered into force on 12 December 2014), Japan (15 January 2015) and China (20 December 2015), the Australian Government reserved the right to screen proposals by private investors from these countries at the lower agricultural screening thresholds (DFAT 2015b, 2016a, 2016b).

[55] Section 4 of the FATA and Regulation 12 of the Foreign Acquisitions and Takeover Regulations 2015 (Cwlth) define an 'agribusiness' as an Australian business, entity or a subsidiary of the entity that derives earnings (or uses assets) in carrying on a business in agriculture, forestry, fishing (including food product manufacturing), and the value of its earnings (or assets) exceeds 25 per cent of the entity's total earnings (or assets). The agribusiness threshold of $55 million refers to the value of the investment in the agribusiness, regardless of the value of that agribusiness (Treasurer 2016).

[56] The agribusiness threshold of $1094 million is triggered for acquisitions of a 'substantial interest' (20 per cent or more, or $218.8 million) in an agribusiness valued above $1094 million (Australian Government 2015c).

Table 12.1 **Foreign investment review thresholds for the agricultural sector[a]**

As at 1 December 2015

	Threshold — US, NZ and Chile (not cumulative)	*Threshold — other countries*
	$ m	$ m
Agribusiness	1 094	55 (252)
Agricultural land[b] (including leases)	1 094	15 (252)
Foreign government investors	0	0

a Previous thresholds in parentheses. **b** The agricultural land threshold for Singapore and Thailand is $50 million (which is not cumulative), where land is used wholly and exclusively for a primary production business.

Sources: Treasurer (2016); Treasury (2015d).

Agricultural screening thresholds differ to those for foreign investment proposals in other sectors. For example, the threshold for foreign investment proposals in residential land, vacant commercial land, media, and mining and production tenements is $0 (that is, all proposals are subject to screening by the FIRB, for investors not from Chile, New Zealand or the United States). Foreign government investors (in all sectors) are also subject to a $0 threshold and additional national interest factors (Treasurer 2016).

In contrast, the thresholds for business acquisitions are either $252 million or $1094 million, depending on whether the private investor is from a country with which Australia has a bilateral preferential trade agreement, and if so, whether it is a 'sensitive' business.[57] These thresholds are indexed and are not cumulative.

Most foreign investment applications considered under the foreign investment review framework (including those for agricultural land and agribusiness) are approved (table 12.2). In 2014-15, the FIRB received 37 953 applications and all were approved — 77 proposals (valued at $5.3 billion) were approved in the agricultural, forestry and fishing sector. However, conditions were attached to about 40 per cent of approved foreign investments and 799 applications were withdrawn (FIRB 2016b).

However, some applications may not be submitted because of concerns about delay, rejection or uncertainty. This may imply a higher implicit rejection rate (and cost of capital), although the number of foreign investment applications deterred by the application process is unknown.

[57] Sensitive businesses include: media; telecommunications; transport; defence- and military-related industries and activities; encryption and securities technologies and communications systems; and the extraction of uranium or plutonium; or the operation of nuclear facilities (Treasurer 2016, p. 13).

Table 12.2 **FIRB foreign investment applications[a] and rejections[b]**
1979–80 to 2014–15

Financial year	*Rejection rate (% of applications)*	*Rejections*	*Applications*
1979–1984	2.89	255	8 829
1985–1990	1.90	332	17 449
1991–1996	1.79	470	26 279
1997–2002	1.87	524	27 966
2003–2008	0.57	212	37 095
2009–2014	0.06	62	104 238

a Total number of applications considered consists of applications that were approved, rejected, withdrawn and exempt by the FIRB. **b** Most rejections related to the real estate sector. According to the FIRB's annual reports, there have only been 16 rejections of foreign investment proposals in the agricultural, fisheries and forestry sector: 13 were rejected in 1983-84, and one each in 1984-85 and 2013-14. In 2014-15, there were no proposals rejected in the sector.

Source: FIRB annual reports (various years).

Agriculture-specific arrangements are relatively new

The current foreign investment framework reflects changes made by the Australian Government in 2015 to foreign investment in the agricultural sector. The changes included:

- the lowering of thresholds for agribusiness from $252 million to $55 million (which took effect on 1 December 2015), and for agricultural land from $252 million to $15 million (cumulative and not indexed) for investors from countries other than the United States, New Zealand, Singapore, Thailand and Chile (from 1 March 2015)
- the establishment of the Register of Foreign Ownership of Agricultural Land, regardless of the value of that land (from 1 December 2015)
- the introduction of application fees for all foreign investment proposals, including for agricultural land and agribusiness (from 1 December 2015) (table 12.3).

Prior to the changes in 2015, foreign investment proposals in the agricultural sector were assessed as general business acquisitions and not subject to agriculture-specific thresholds. In January 2012, the Government released a policy statement outlining the national interest factors typically considered in foreign investment applications involving the agricultural sector (FIRB 2012).

Table 12.3 **Application fees for foreign investment applications**
As at 1 December 2015

Agricultural land	*Fee*
$0–$1 000 000	$5 000
$1 000 001–$1 999 999	$10 000
$2 000 000–$2 999 999	$20 000
Further $1 million increments	$10 000 per $1 million, up to a maximum of $100 000
Agribusiness	
$1 billion or less	$25 000
More than $1 billion	$100 000

Source: Treasurer (2016).

12.2 The importance of foreign investment to Australia

Foreign investment contributes to higher Australian living standards

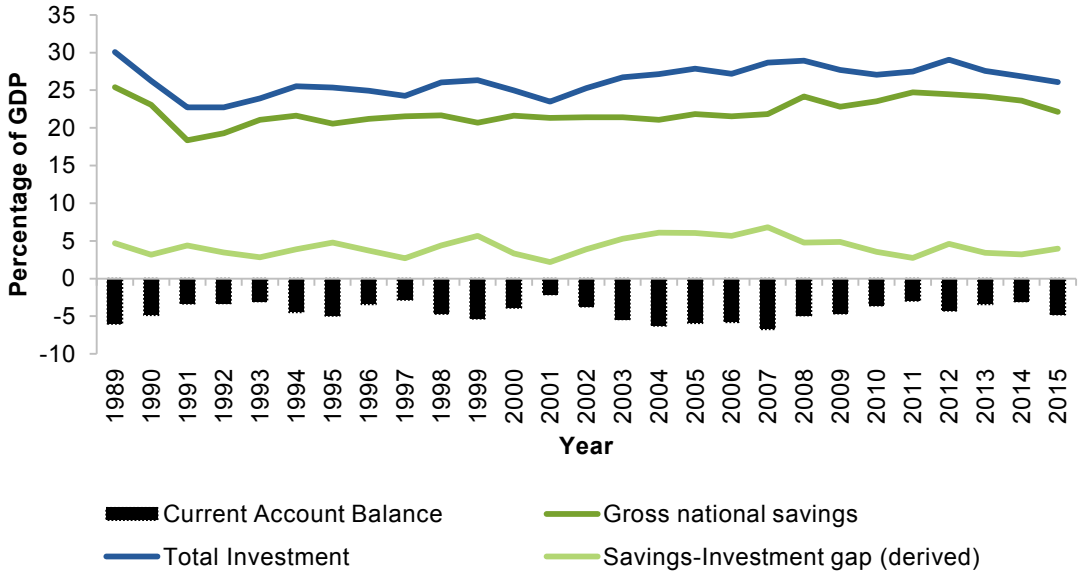
Australia, as a relatively small open economy, relies (and has historically relied) on foreign investment to bridge the gap between national savings and national investment (McKissack and Xu 2016; Saynal 2014). For the past few decades, this gap has averaged approximately 4 per cent of GDP (figure 12.1).

Foreign ownership of Australian assets falls broadly into two categories: foreign direct investment (FDI) and portfolio investment.

- FDI refers to investment in an enterprise where the foreign investor has control or a significant degree of influence over the management of the enterprise. Direct investment occurs when the foreign investor has an equity interest in an enterprise of 10 per cent or more of the voting power (that is, of ordinary shares or voting stock) and tends to involve a lasting relationship with the enterprise (ABS 1998; IMF 2009).
- Portfolio investment refers to the purchase of equity and debt securities (apart from direct investment and reserve assets), where the foreign investor has an equity interest in an enterprise of less than 10 per cent of the voting power (of ordinary shares or voting stock). It does not result in managerial control or influence in the operation of the enterprise. Portfolio investment can be more transient, passive and speculative than FDI because negotiable securities can be bought and sold within a short period of time (ABS 1998; IMF 2009).

Figure 12.1 **Australia's savings and investment gap[a]**

September 1988–December 2015



[a] There may be statistical discrepancies due to net errors and omissions in the investment data. The savings-investment gap is derived by total investment less gross savings. Total investment refers to investment financed by Australia and the rest of the world. Investment consists of capital formation (non-produced, non-financial assets) and financial investment (direct investment, portfolio investment, financial derivatives, other investment and reserve assets). The current account balance measures exports and imports of goods and services, primary income and secondary income in the Balance of Payments.

Data sources: ABS (2015b, 2015c, 2016b, 2016c).

The majority of foreign investment in Australia is portfolio investment. In 2015, the level (or stock) of total foreign investment in Australia was about $3024 billion. Portfolio investment accounted for approximately 54 per cent, direct investment 24 per cent, other investment 16 per cent and financial derivatives 6 per cent. In 2015, the level of foreign *direct* investment in the agricultural, forestry and fishing sector was about $1.6 billion (or 0.05 per cent of total foreign investment) (ABS 2016e).

Net inflows of foreign capital increase investment in the Australian economy, and support higher future rates of economic growth and employment, as well as higher living standards in Australia (box 12.1).

Box 12.1 Evidence that foreign investment benefits Australia

Empirical research quantifying the contribution of foreign investment to Australia's economic growth, while limited, shows that foreign investment increases Australia's income and living standards.

- Layton and Makin (1993) estimated that between 1984 and 1989, foreign capital raised Australia's real national income by 15 per cent more than would have occurred in the absence of foreign capital inflow.
- Iyer, Rambaldi and Tang (2009) found that foreign direct investment increased Australia's economic growth in both the short and long term over the period 1988 to 2003.
- According to the Business Council of Australia, Access Economics estimated that a 10 per cent increase in foreign direct investment inflows over the next decade (2010–2020) would increase real GDP by 1.2 per cent ($16.5 billion) (BCA 2010).
- Economic modelling by Treasury estimated that a reduction of foreign capital inflow and investment of 1 per cent of nominal GDP would reduce Australia's gross national income by about 0.5 per cent each year over a ten-year period — that is, other things being equal, restrictions on capital inflow would reduce the wellbeing of Australians (Gali and Taplin 2012).

Foreign direct investment is an important source of new technology and management practices for Australian businesses, which in turn encourages innovation and helps drive productivity growth. Foreign investment can also open up access to global supply chains and markets, and provide additional export opportunities. The productivity gains from foreign direct investment are likely to have positive spillover effects to other industries and the wider economy (PC 2015a). As the Treasury said:

> FDI can also help deliver improved competitiveness and productivity performance over time, including by: providing much needed infrastructure; allowing access to global supply chains and markets; and enhancing Australia's skill base — through greater knowledge transfer from foreign enterprises to domestic firms by exposure to more innovative work practices. (McKissack and Xu 2016, p. 11)

The importance of foreign investment to Australian agriculture

Foreign investment has been an important part of Australia's agricultural sector for almost two centuries. Foreign investment was crucial in the early stages of development of the sector when large-scale land improvements (for example, clearing and fencing), machinery, livestock and irrigation were required (Hooke 1967; Shaw 1967). Two of Australia's oldest operating agricultural businesses — the Australian Agricultural Company (established in 1824) and Van Diemen's Land Company (1825) — were established as a result of British investment (AACo 2016; VDL 2014). British investment also contributed to the establishment of S. Kidman and Company Limited, one of Australia's largest beef producers and Australia's largest private landholder (Morrison 2015; Myers 2009; S. Kidman & Co Ltd 2016; The Register 1909).

Foreign investment also led to the introduction of new technology in Australian agriculture. For example:

- American cotton growers who purchased agricultural land in Australia in the 1960s brought with them the technology and expertise to produce cotton on a large scale, which increased the scale and intensification of cotton growing in Australia (Moir 2011; Myers 2010). Australia is now a major world producer of cotton — in 2014-15, it was the third largest exporter of cotton in the world (ABARES 2015a).
- Australia's beef industry has a long history of foreign investment, with the British–Argentinian family Vestey (a significant investor in the beef industry in the Northern Territory) pioneering a number of innovations (Moir 2011). The Cattle Council of Australia (2015, p. 1) noted that 'Australian cattle properties have previously received foreign investment from England, the United States, China, Japan and Brazil, amongst others.'

Given Australia's geographic isolation and the relatively small size of many farm operations (ABS 2012, 2016a), the transfer of foreign technology and knowledge, and access to global supply chains, is particularly important for the agricultural sector.

Foreign investment can also promote competition, which in turn can improve the competitiveness of Australian agriculture (PC 2014e). This can benefit both consumers (through lower prices and greater product variety) and producers.

Foreign investment will continue to be required to improve the productivity and competitiveness of Australia's agricultural sector and expand food production to meet increased global demand. According to the Australia and New Zealand Banking Group Limited (ANZ Bank), Australia's agricultural sector will require high levels of capital investment (including foreign investment) to support growth in the sector (Port Jackson Partners 2012). In a report prepared for the ANZ Bank, Port Jackson Partners estimated that by 2050, the total capital requirement could be up to $1.6 trillion, and the shortfall between capital requirements and available domestic capital could reach $850 billion (Port Jackson Partners 2012).

The Australian Government recently identified the food and agribusiness sector in the Northern Territory as a potential area of high growth that will require substantial further foreign investment (Australian Government 2015d). Preparing extensive tracts of land for cropping, including the infrastructure required to support cropping, will involve a significant amount of capital. The Western Australian Government (sub. 54) also noted that foreign investment will be needed for investment in the state's irrigation infrastructure.

The importance of foreign investment for Australian agriculture was acknowledged by a number of participants to this inquiry (box 12.2). For example, the National Farmers' Federation (NFF) said that:

> The NFF supports foreign investment in Australian agriculture and recognises the important role it has and will continue to play in a vibrant agricultural supply chain. To date, foreign investment has proven to be overwhelmingly positive for Australian farmers and regional

communities. It has delivered significant amounts of capital into our production systems at a time when finance from the banks has been harder to access. This capital has improved our efficiency and ensured that our farmers can continue to compete in a highly distorted global marketplace for agricultural commodities. (sub. 61, p. 31)

The Cattle Council of Australia noted the importance of foreign investment in facilitating access to export markets.

> As an industry that exports over 65% of our product to over one hundred markets around the world, foreign investment only strengthens relationships between Australia and these markets. (2015, p. 1)

Box 12.2 Participants point to the importance of foreign investment for Australian agriculture

Primary Producers SA said that:

> Australian agriculture and the food industry needs significant investment to achieve what it can do for the Australian economy. Overseas investment is under attack from various quarters and some media areas. We realise that to do what agriculture wants we need significant investment. Unfortunately we are aware the major source of funds in Australia (superannuation funds) have no vision for food and wine, so foreign investment is needed. (sub. 41, p. 5)

Voice of Horticulture said that it:

> … recognises that foreign investment provides greater availability of capital to invest in the upgrade of on-farm and supply chain facilities. Foreign companies operating in Australia can often form better direct links between growers in Australia and the import/retailers from their home country. A better understanding of the overseas customer also enables them to focus on delivering product that will meet consumer needs. Additionally, foreign investment also has the potential to improve export market access and the commercial viability of protocols through links between the foreign investor and officials or key influencers in the home country. (sub, 42, p. 30)

GrainGrowers said that it:

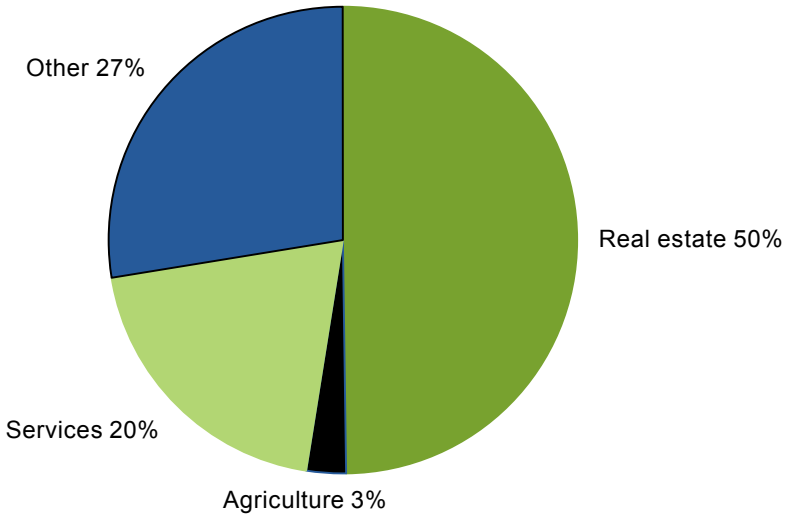
> … supports foreign investment in Australian agriculture and recognises the important role it has played and will continue to play in a vibrant agricultural supply chain. Overall, foreign investment has had a positive impact on the Australian grains industry, providing significant capital injections across the supply chain and assisting some farmers to sell their assets and retire. (sub. 73, p. 20)

Some facts about foreign direct investment in agriculture

In 2014-15, approved foreign direct investment in the Australian agricultural, forestry and fishing sector was $5.3 billion, or about 3 per cent of the total value of approved foreign investment (FIRB 2016b) (figure 12.2). Over the past five years, the average level of approved foreign investment in the sector was just over $3.3 billion (FIRB 2016b). In 2014-15, about 2 per cent of approved foreign investment (valued at $3.8 billion) was in the food, beverages and tobacco industry (FIRB 2016b).

Figure 12.2 **Agriculture's share of total FIRB approved foreign investment[a]**

2014-15



a 'Agriculture' includes forestry and fishing industries. 'Other' refers to the finance, insurance, tourism, manufacturing, mineral exploration and development industries. Approved investment in real estate includes off-the-plan approvals given to real estate developers and approvals for annual programs. Totals may not add due to rounding errors. There is potential double-counting as one proposal that operates in multiple sectors was recorded as one approval per sector. Corporate reorganisations are excluded (85 in 2014-15).

Data source: FIRB (2016b).

While information on foreign direct investment in Australian agriculture is limited, based on what is available, the data show that the majority of Australian agricultural assets are locally owned, and that foreign investment is concentrated in a few sub-industries and businesses.

- 98.9 per cent of agricultural businesses were Australian-owned on 30 June 2013 (compared to 98.5 per cent on 31 December 2010) (ABS 2011, 2014b).
- 87.5 per cent of agricultural land was Australian-owned on 30 June 2013 (compared to 88.6 per cent on 31 December 2010) (ABS 2011, 2014b).
- Most foreign agricultural landholdings are concentrated in the hands of a few businesses with relatively large landholdings. In 2013, 95 per cent of foreign-owned[58] Australian agricultural land was owned by 45 businesses, each with holdings of over

58 That is, with some level of foreign ownership. The ABS Agricultural Land and Water Ownership Survey measures the level of direct foreign ownership of businesses with agricultural landholdings in Australia in three categories: greater than 0 per cent and less than 10 per cent foreign ownership; greater than or equal to 10 per cent and less than or equal to 50 per cent foreign ownership; and greater than 50 per cent foreign ownership (ABS 2014b).

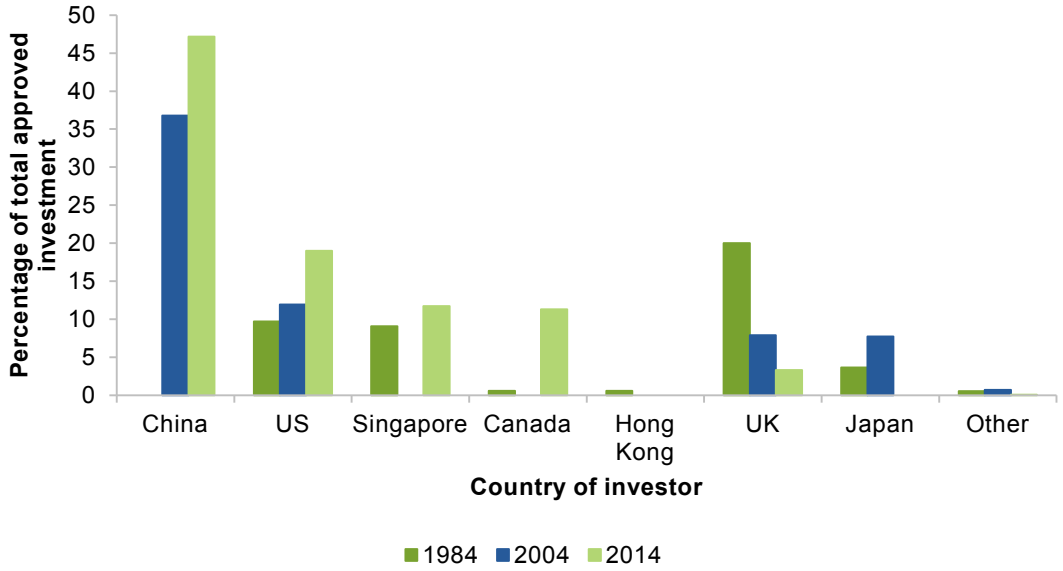
100 000 hectares (compared to 94 per cent of foreign-owned agricultural land owned by 44 businesses in 2010) (ABS 2014b).

- Most foreign investment in agricultural land is in the sheep, beef cattle and grain farm sub-sector — 97 per cent of foreign-owned agricultural land was in this sub-sector in 2013 (ABS 2014b). In 2010, the same sub-sector also reported the highest proportion of foreign ownership of agricultural land (about 12 per cent of the sub-sector had foreign-owned agricultural land) (ABS 2011).

The countries accounting for most of the approved foreign direct investment in the agricultural, forestry and fisheries sectors in 2014-15 were: China (about $2.5 billion or 47 per cent), the United States ($1.0 billion or 19 per cent), Singapore ($619 million or 12 per cent), Canada ($597 million or 11 per cent) and the United Kingdom ($175 million or 3 per cent) (FIRB 2016b) (figure 12.3).

Figure 12.3 **FIRB approved foreign investment in agriculture[a] by investor country**

1984-85 to 2014-15



[a] Includes forestry and fishing sectors. Totals may not add due to rounding. Investment of $10 million or less was regarded as nil investment (from China (1984), Canada (2004), Hong Kong (2004, 2014) and Japan (2014)). There may be over-counting as it only accounts for proposed, rather than actual foreign investment. Double-counting is also a potential issue, as multiple countries proposing to acquire the same target asset was recorded as one approval per country. The figures also understate the amount of total foreign investment, as they exclude unscreened investment. Comparison between countries and over time may be difficult due to changes in screening thresholds arising from preferential trade agreements. Not shown are figures for proposals where an Australian controlled investment manager acts on behalf a foreign investor, or joint ventures between Australian and foreign investors.

Data sources: FIRB (1986, 2006, 2016b); McKissack and Xu (2016).

Investment patterns from source countries have changed over time. In 2014-15, China became, for the first time, the largest source of approved foreign investment in the agricultural, forestry and fishing sector. Proposed investment from China increased from $32 million (about 1 per cent) in 2013-14 to $2.5 billion (47 per cent) in 2014-15 (FIRB 2015a, 2016b).

12.3 A closer look at the new foreign investment arrangements for agriculture

Community concerns underpin the shift to lower screening thresholds

Community concerns about foreign ownership of Australian agricultural assets, while not new, have gained prominence in recent years. A number of public surveys, including the ABC's Vote Compass surveys, Essential media polls and annual polls conducted by the Lowy Institute for International Policy, show that many Australians do not support foreign investment and that they are particularly concerned about foreign investment in agriculture (box 12.3). Some community concerns appear misplaced, and may have arisen partly because of a lack of information and informed debate about foreign investment in Australian agriculture. The Financial Services Institute of Australia pointed out that:

> The Australian public display paradoxical attitudes to foreign investment. Polls show that Australians recognise the benefits of globalisation and free trade but also strongly oppose foreign ownership of Australian assets. (2014, p. 14)

A number of government inquiries and information collection projects have sought to gain a better understanding about the extent of foreign investment in agriculture.

- An information gathering process, which commenced in November 2010, was undertaken to address some emerging community concerns about foreign ownership of agricultural land and food production in Australia.[59] The Australian Bureau of Statistics (ABS) was directed by the Australian Government to collect information about the level of foreign ownership of agricultural businesses, land and water entitlements in a farm survey (ABS 2011).

[59] This process commenced following the introduction of the Foreign Acquisitions Amendment (Agricultural Land) Bill 2010 into the Senate by Senators Nick Xenophon and Christine Milne on 24 November 2010. The main provisions of the Bill proposed to increase the scrutiny of foreign investment in agricultural land through the introduction of a spatial screening threshold of five hectares (which is the approach currently used in New Zealand) for foreign investment in agricultural land, create a 'national interest' test for proposed acquisitions of agricultural land, and require the Treasurer to publish on the Treasury website information about agricultural land applications. The proposed definition of 'interest in Australian agricultural land' included agricultural businesses. The Bill ultimately failed to pass the Senate and has since lapsed.

Box 12.3 Many Australians are concerned about foreign investment in Australian agriculture

Public surveys consistently show that many Australians are concerned about foreign investment in agriculture.

- A 2012 Lowy Institute poll of public attitudes to foreign investment found that 81 per cent of those surveyed (1005 respondents) were against the Australian Government allowing foreign companies to buy Australian farmland to grow crops and farm livestock (and 63 per cent of those surveyed were strongly against). Of the respondents who said that the Australian Government was allowing too much investment from China, 54 per cent cited concerns that 'China is seeking to buy Australian mining and agricultural companies and these need to be kept in Australian hands' (Hanson 2012).
- The 2013 Lowy Institute poll found that 57 per cent of those surveyed (1002 respondents) considered that the Australian Government is allowing too much investment from China (Oliver 2013). And the 2014 poll found that 60 per cent of those surveyed (1150 respondents) were against foreign investment in agriculture (equal to ports and airports). This was the lowest level of support across all sectors, and in contrast with 58 per cent of respondents in favour of foreign investment in manufacturing and 55 per cent for the financial sector (Oliver 2014).
- A 2013 ABC survey (Vote Compass) found that almost 84 per cent of the 1.4 million people who responded to the survey either strongly agreed (55 per cent) or somewhat agreed (29 per cent) that the Australian Government should further restrict foreign ownership of agricultural land (ABC 2013). A 2013 Essential Media Poll found that 55 per cent of 1075 respondents disagreed that foreign investment in Australian agriculture — including buying farmland — is good for Australia's economy (EMC 2013).

Another study (based on a sample of 1523 respondents) undertaken by Laurenceson, Burke and Wei (2015) looked at how the Australian public's preferences over foreign investment in agriculture are determined, and found that the attributes of foreign investment that are of greatest concern to Australians are (in order of concern):

- the share of foreign ownership in Australian agriculture — foreign investment is preferred more the lower the total share of foreign ownership
- the financial status of the Australian agricultural business — foreign investment is preferred more when the business is not in financial distress
- local management and control — foreign investment is preferred more when Australian citizens occupy a majority of senior management and board positions
- the country of origin of the foreign investor — foreign investment from the United Kingdom and the United States is preferred more than foreign investment from China and Japan
- the dollar value of foreign investment — foreign investment is preferred more the higher the value of the investment.

Interestingly, the authors noted that the attributes that are of most concern to the public (according to the study) are not the same as those attributes used (or used less often) to flag agricultural investment proposals for scrutiny in Australia's foreign investment review regime.

- In the same year, the Rural Industries Research and Development Corporation commissioned the Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES) to examine 'the role and history of foreign investment in the development of agriculture, the extent of foreign ownership of Australian agricultural land and the factors driving foreign investment in Australian agriculture' (Moir 2011, p. iii). An important observation of this report was that:

  > Information on foreign investment in agriculture and agribusiness is limited … there is no systematic source of data on foreign ownership of agribusiness companies. Nor is there regular information on the nationality of foreign investors or about the type of entity involved. The extent of investment by foreign government entities is also not known. (Moir 2011, p. 1)

To increase transparency to the public and facilitate better informed policy making, ABARES proposed the regular collection of information on foreign investment in agricultural land, either through periodic collection of data by the ABS, or the establishment and maintenance of a land register of foreign ownership.

A Coalition policy discussion paper on foreign investment in Australian agricultural land and agribusiness in 2012 observed that there was:

> … growing community and industry concern that some types of acquisitions may be contrary to the national interest and that a strengthening of the regime may be advantageous to the long-term prosperity and food security of Australia. (Liberal Party of Australia 2012, p. 3)

The paper identified several areas for public discussion, including:

- establishing a national register of foreign ownership of agricultural land
- lowering the screening threshold for agricultural land to $15 million and making it cumulative
- lowering the screening threshold for agribusiness to 15 per cent or more in an agribusiness valued at $244 million (indexed annually) or $53 million.

The discussion paper also stated that there was:

> … a common perception that the thresholds for the FIRB to assess foreign acquisitions are too high for the agricultural sector and do not adequately reflect the average value of agricultural assets or land holdings … The result is that many purchases of agribusinesses, and virtually all sales of agricultural land, are never reviewed by the FIRB against the national interest. Moreover, the scope for even very substantial agricultural land holdings to be acquired by a foreign interest without triggering the FIRB's review, via creeping acquisition of separate parcels of land, was noted. (Liberal Party of Australia 2012, p. 8)

And like ABARES, the discussion paper noted that there were concerns that the extent of foreign ownership was insufficiently documented and that the lack of data had 'undoubtedly stirred rather than dampened concerns about the extent of foreign land ownership that may (or may not) be occurring throughout Australia' (2012, p. 3).

In June 2013, the Senate Rural and Regional Affairs and Transport References Committee tabled an inquiry report on foreign investment and the national interest. It identified two key issues with the size of the foreign investment threshold for agricultural land and businesses (which at the time was $248 million and not cumulative):

- the potential for cumulative purchases of agricultural land by foreign companies to avoid FIRB review
- the lack of review of major agricultural purchases that could impact local economies (SRRATRC 2013).

The Committee also pointed to concerns raised by participants to its inquiry that foreign investment arrangements were making it difficult for local producers to gain access to farm assets in the region (in that local farmers were being priced out of the market).

It concluded that:

> Very few Australian farm purchases trigger a FIRB review yet the impact of foreign investments below the $248 million threshold on local economies could be significant. The committee is concerned that many and perhaps virtually all private foreign acquisitions of agricultural land and business are proceeding without any consideration of whether it is in Australia's national interest. In the committee's view this is largely out of step with contemporary community expectations. (SRRATRC 2013, p. 74)

The Committee recommended that (among other things) the screening threshold for private foreign investment in agricultural land be lowered to $15 million (and be made cumulative). It also recommended that any proposed foreign investment of an agribusiness should be reviewed by the FIRB where the investment exceeds 15 per cent or more of an agribusiness valued at $248 million, or exceeds $54 million.

In February 2015, the Australian Government announced that it would reduce the screening threshold for agricultural land to $15 million (cumulative) and $55 million for agribusinesses to increase public scrutiny of foreign investment proposals in the agricultural sector. These changes were implemented later in 2015.

Mixed views on the lower screening thresholds for agriculture

The new screening thresholds were considered to be too low by some participants. The Australian Forest Products Association said that:

> The recent lowering of the FIRB thresholds … represents a significant hurdle for overseas investors in rural land. (sub. 11, p. 5)

The Australian Lot Feeders' Association (in its submissions to the new legislative framework for foreign investment) stated that:

> … the $15m threshold is too low for foreign investment feedlot acquisitions on the basis that: As a proportion of the sector, there are a large number of agricultural properties with feedlots that would exceed the proposed $15 million threshold … (2015a, p. 1)

And also that:

> … feedlots (particularly large ones) are high value investments with foreign companies often the only potential purchasers who have the necessary funding capacity to acquire such businesses. By decreasing the threshold to $15 million [it] would therefore potentially deter a significant proportion of buyers for such assets … Importantly, a large proportion of feedlots in Australia would be valued above $15 million. This is not only because of the high cost of feedlot infrastructure assets, but also because the purchase is almost always attached to the sale of the land on the property as a whole. (2015b, p. 3)

The Business Council of Australia, in its submission to the Treasury options paper on strengthening Australia's foreign investment framework, argued that the lower thresholds may lead to the perception among foreign investors that their investment in Australian agriculture is not welcome.

> Over 99 per cent of applications to the FIRB are approved. The introduction of new lower thresholds for foreign investors in Australian agribusiness and for Australian rural land introduces an additional hurdle for potential investors. It sends a strong negative message about Australia's attitude towards foreign investors. This risks having a chilling effect on future investment. (BCA 2015, pp. 8–9)

Others, such as the Office of Best Practice Regulation, noted that the lower thresholds:

> … will better account for the relative significance of an investment in particular sectors where assets, business or land values are generally lower. (McNamara 2015, p. 1)

And the NFF stated that the:

> … safeguards enacted by the amendments, including the $15 million cumulative screening threshold for agricultural land and $55 million for agribusiness, help to ensure that due consideration is given to foreign ownership coming into the sector. (2016c, p. 1)

However, it previously suggested that the combined effect of the new definition of 'agribusiness' (which now encompasses first stage downstream processing and manufacturing businesses beyond the farm gate) and the lower threshold:

> … will trigger a FIRB review for what amounts to a relatively insignificant stake in some processors or manufactures servicing and supplying farmers. (2015d, p. 10)

The new lower thresholds for foreign investment in agricultural land and agribusiness will capture more investments, which means more foreign investment proposals will now require foreign investment clearance and the payment of application fees. The lower thresholds (and the application fees) not only create a wedge between the price paid by the buyer and received by the seller, but also delays any sale. At the margin, the lower thresholds may deter potential foreign buyers.

In 2014-15, the average value of a farm in Australia was about $3.5 million; however, land prices vary considerably by state and territory (ABARES 2016c; Treasury 2015d).

The regulation impact statement (RIS) supporting the changes to the foreign investment framework for agriculture estimated that as a result of the changes to the thresholds, the FIRB will be required to screen an additional 120 agricultural land and 5 agribusiness applications each year (Treasury 2015d). In the four months between 1 March 2015 and 30 June 2015, 17 proposals were screened and approved for agricultural land which would not have been captured by the previous thresholds (FIRB 2016b). In 2014-15, no applications in the agricultural sector were rejected, although some approvals were subject to conditions (FIRB 2016b).

The new lower thresholds, by requiring more proposals to be reviewed, increase public scrutiny of foreign proposals in the agricultural sector, but also imposes additional costs to foreign investors, industry and the Australian community. The lower thresholds may also deter investment (that is, it does not get to the approval stage).

And as the Financial Services Institute of Australasia said:

> Lost FDI [foreign direct investment] can deny Australia access to much needed capital, employment opportunities, new technologies, international managerial networks, and global supply chains. (2014, p. 7)

The Commission questions whether the benefits of greater scrutiny outweigh the costs, particularly given that the newly established Register of Foreign Ownership of Agricultural Land aims to improve transparency around foreign investment in agricultural land.

Concerns that the lower cumulative threshold could deter investment

Some participants to this inquiry were highly critical of the cumulative threshold for agricultural land. The Consolidated Pastoral Company (CPC) argued that it represented excessive regulatory coverage.

> A threshold of a cumulative value of $15 million for agricultural land as a trigger for FIRB approval means that very small investment above $15 million can trigger a full FIRB assessment process. This is an extreme example of regulation with excessive cover[age]. (sub. 71, p. 17)

Wellard Group Holdings Limited (Australia's largest livestock exporter) said that the cumulative threshold can create disincentives for foreign investors to make ongoing productivity improvements to their property.

> … the time and cost associated with preparing and submitting a FIRB approval and obtaining consent are significant, particularly in the context of small and multiple rural land acquisitions and having regard to current values … the new threshold will disproportionately impact on the possible acquisition of small parcels of rural land by companies like us. For example, under the proposed changes, if Wellard was offered the purchase on a single paddock worth let's say $10,000, next door to our existing farming operations, we would be required to seek FIRB approval. Given this is a relatively immaterial acquisition, the requirement for FIRB approval would require a disproportionate expense of time and money, and associated delay, in

completing what should be a relatively straightforward transaction between a willing vendor and purchaser. (2015, p. 3)

The cumulative threshold change means that every purchase of agricultural land by a foreign investor with current holdings above the threshold, no matter how small the investment, will require FIRB approval (except where an exemption certificate has been granted by the FIRB for a fee of $25 000 (box 12.4)). This affects existing foreign investors in Australian agriculture wanting to increase the scale of their agricultural landholdings or business operations, raising the cost of investment.

Box 12.4 Exemption certificates for foreign investment in agricultural land

From 1 December 2015, all foreign investors can apply for an exemption certificate, which provides FIRB pre-approval for multiple investments in agricultural land (valued at $1 billion or less) for a fee of $25 000, without the need to seek separate approvals. Exemption certificates would generally be granted if the Treasurer is satisfied that the following conditions are met:

- the acquisitions would not be contrary to the national interest
- the total proposed value of multiple acquisitions (of which a single acquisition cannot exceed $10 million) over a three-year period does not exceed $100 million (or $30 million if the land is being acquired for use for another activity)
- periodic reporting on acquisitions made during the three-year period
- the regions or localities for the proposed acquisitions of agricultural land are clearly defined.

Sources: FIRB (2015b); Treasurer (2016).

The FIRB has received some applications for these exemption certificates for agricultural land, and three have been granted from 1 December 2015 (FIRB, pers. comm., 6 June 2016). While the exemption certificate may reduce the regulatory burden of the cumulative threshold for agricultural land, this is only likely to be the case where the total value and expected returns from the proposed investment exceed the $25 000 application fee. It is unlikely to address the type of situation outlined above by Wellard, and may have the effect of adding further cost and complexity to the system, with potentially limited benefit in terms of scrutiny of the national interest.

It is the Commission's view that the exemption is very much a band-aid approach to address a policy that has the potential to dampen productivity-enhancing investment and prevent efficient structural adjustment in the agricultural sector.

Lower screening thresholds could contribute to processing delays

A related concern is that an increase in the volume of applications due to the lower thresholds could cause processing delays (Under the FATA, the Treasurer must make a

decision regarding the application within 30 days, although the Treasurer can extend this period to 90 days by publishing an interim order in the Gazette). The CPC noted that it has:

> … been advised that since the introduction of the new rules there have been significant delays in the processing of applications. CPC notes that … the problem lies with the policy not the personnel. It is clear that FIRB has not been adequately resourced to managing the flood of applications triggered by the new system … CPC understands that nearly all applications have been given extensions; CPC's [sic] has an application before FIRB that has received 2 extensions. (sub. 71, p. 21)

The large size of some financial transactions involved (FIRB 2016b) can mean that delays will impose a significant economic cost on both foreign investors and domestic vendors. As explained by the NZ Treasury, foreign investors may incur higher costs from investing in forward contracts to mitigate the foreign exchange risk associated with delays in processing foreign investment applications.

> … the cost of delay to business activity can be high. For example one potential cost would be if the investor hedges their investment capital while seeking consent. Hedging a NZ$100 m investment (the minimum business investment that would be screened) for two months would cost around $650,000, increasing to $2 million for six months. The longer the time taken to seek consent, the greater the cost of hedging, and this cost exceeds the fees paid by the investor. (2009, pp. 4–5)

Additional funds, including from the new application fees, have been provided to the FIRB to administer the new foreign investment review system (Treasury 2015a). To the extent that there have been some delays, this may only be a temporary issue while the FIRB establishes and adjusts to the new system. Although the exact numbers for investment applications in the agricultural sector are unknown, in 2014-15, over 99 per cent of proposals were processed by the FIRB within the statutory period of 30 days (FIRB 2016b).

Do the benefits of increased scrutiny outweigh the costs?

As noted earlier, the Australian agricultural sector requires significant investment, which it must compete for in global capital markets. Australia is estimated to account for less than 5 per cent of global institutional investment in agriculture, and increasingly competes for foreign capital with other countries, including those in Asia, South America and Africa, which seek investment to develop their economies (Makunike 2009; Montemayor 2009; Valoral Advisers 2015).

Factors influencing inward foreign direct investment decisions include: the restrictiveness of foreign ownership; the general business environment (such as market size, domestic interest rates and taxation policy); exchange rates; labour costs, availability and quality; the presence of industry clusters or agglomeration; and infrastructure and its accessibility (OECD 2007). While many of these factors are beyond the control of the Australian Government, it can control the restrictiveness of foreign ownership arrangements. It is

important that Australia's foreign investment review framework does not unnecessarily restrict investment in the agricultural sector (or any other sector).

Australia's foreign investment policy arrangements in agriculture are considered to be relatively restrictive compared with other developed countries, mainly due to its screening processes (OECD 2015a). The OECD publishes an index of the restrictiveness of the foreign direct investment rules.[60] The FDI Index gauges the restrictiveness of a country's FDI rules by looking at four main types of statutory restrictions on inward FDI that specifically apply to foreign investors:

- foreign equity limitations
- screening or approval mechanisms
- restrictions on the employment of foreigners as key personnel
- other operational restrictions. For example, restrictions on expansion on branching and capital repatriation, or on land ownership by foreign-owned enterprises.

Australia's foreign investment rules for the agricultural sector have become more restrictive as a result of the changes in 2015, resulting in a deterioration in Australia's ranking.[61] The OECD's FDI Index for the agricultural sector (based on all four statutory restrictions) ranked Australia in 2015 as the 4th most restrictive out of 34 OECD countries (7th in 2014) — Australia is equal in restrictiveness to New Zealand, but more restrictive than the United Kingdom (10th most restrictive), Canada (11th) and the United States (one of the least restrictive countries). Australia was the 13th most restrictive (20th in 2014) out of the 59 OECD and non-OECD countries examined (OECD 2015a).

In 2015, Australia was also ranked as the most restrictive country out of 34 OECD countries and out of the 59 OECD and non-OECD countries examined, based on its screening and approval restrictions for foreign investment in agriculture. In 2014, it was 3rd most restrictive among the OECD countries, and 5th most restrictive among all countries examined — including Canada, New Zealand and the United States (box 12.5). The restrictiveness of Australia's screening arrangements is equal to New Zealand and Myanmar, but Australia is more restrictive than China, Mexico, Brazil and Ukraine (OECD 2015a).

---

60 The index is subject to data and methodological limitations, which may provide a distorted view of the restrictiveness of foreign investment rules in a country. For example, the index only captures foreign investment restrictions at the national level, even though there may be restrictions at the state or province level (Moir 2011). Nor does it measure the actual enforcement of statutory restrictions on foreign investment (Kalinova, Palerm and Thomsen 2010). Notwithstanding, the index can still provide some insight into the restrictiveness of foreign investment rules.

61 Index scores range from 0 to 1, where 0 indicates that a country's agricultural sector has no barriers to foreign direct investment, and 1 indicates that it is completely closed to foreign direct investment (OECD 2015a). To derive the restrictiveness rankings, each country's index scores were ordered from highest to lowest. It is possible for multiple countries to receive the same score and therefore the same restrictiveness ranking.

Box 12.5 International comparisons of foreign investment screening thresholds in agriculture

The current screening threshold for foreign investment in agricultural businesses in Canada under the *Investment Canada Act* 1985 is Can$600 million (approximately A$632 million). However, it will be progressively increased over time, to Can$800 million (A$843 million) starting 24 April 2017, and to Can$1 billion (A$1.05 billion) starting 24 April 2019 (Industry Canada 2013). However, there are restrictions on the size of foreign-owned agricultural landholdings in some provinces (Bowler and Ackhurst 2015; Moir 2011).

In the United States, while there are no restrictions on foreign investment in agriculture at the federal level, there are some restrictions (including prohibition) on the foreign ownership of agricultural land in about half of the individual states (Moir 2011; OECD 2013; USDT 2008).

In New Zealand, the screening threshold for agricultural land is five hectares and for agricultural businesses, it is NZ$100 million (approximately A $95 million) under the *Overseas Investment Act 2005* (NZ).

While specific estimates of the cost of regulating foreign investment in the agricultural sector are not available, the total cost of regulating foreign investment is likely to be significant. For example, the economic cost of delays and withdrawn investment as a result of mandatory FIRB screening and approval requirements is estimated to be a minimum of $5.5 billion a year, equivalent to 0.6 per cent of nominal GDP (ITS Global 2008). More generally, an OECD study estimated that if Australia reduced FDI restrictions to the level in the United Kingdom (the most open OECD country at that time according to the indicators used in the study), it could increase the stock of foreign direct investment by about 45 per cent over the long term (based on bilateral FDI relationships between 28 OECD countries over the 1980–2000 period) (Nicoletti et al. 2003).

It is also unclear that national interest considerations are different for foreign investors proposing to invest in agriculture compared with other sectors of the economy that have a higher screening threshold of $252 million (such as acquisitions in sensitive businesses, such as telecommunications, transport, defence and military related industries). As noted earlier, few proposed foreign investments in the agricultural sector have been rejected by the Treasurer on national interest grounds. From 1 July 2015, 173 agricultural proposals were approved. Of these, only two proposals were above the agricultural land threshold that applied prior to 1 March 2015, and a further 72 were applications from foreign government investors (FIRB, pers. comm., 6 June 2016). Therefore, it is unclear that national interest considerations justify the significantly lower thresholds — or indeed, whether there are additional national interest issues associated with lower valued agricultural properties and businesses that were not being captured by the previous (higher) threshold of $252 million.

Also, under the cumulative threshold for agricultural land, there could be proposed investments that are of such low value that it would be highly unlikely that they would be contrary to Australia's national interest. The cumulative threshold, combined with the new

application fees, could have the unintended consequence of deterring low-value but important investment aimed at increasing the scale and efficiency of existing agricultural operations.

The lower agricultural thresholds, combined with different thresholds for proposed investment in other sectors and for investors from different countries, increases the complexity of the system. The CPC raised concerns about the inconsistency in the value and cumulative nature of thresholds for agricultural land.

> This new foreign investment is inconsistent with the existing rules. Investors from Chile, the United States and New Zealand have a threshold of $1094 million before the FIRB approval is triggered. If an investor comes from Singapore or Thailand, the threshold is $50 million. The thresholds in these two categories [are] not cumulative. However, if an investor comes from China, South Korea or Japan, or indeed even Ireland or the Unite[d] Kingdom, the threshold is just $15 million and cumulative. (sub. 71, p. 17)

Investors are also subject to different definitions of 'agribusiness' and 'agricultural land' as a result of preferential trade agreements, which affect the scope of the thresholds.

Whether national interest considerations are materially different for investors from countries who have been afforded higher and different thresholds, compared with those who have not, is unclear. Lower foreign investment screening thresholds should not be maintained solely for use as a bargaining chip in trade and investment negotiations (PC 2015a). The different thresholds affect the relative restrictiveness of Australia's foreign investment framework for each country and may therefore distort foreign investment flows in agriculture (and in other sectors of the economy) by encouraging some investment over others (Hanratty 1995; Kirchner 2008).

Different thresholds can also send mixed signals to foreign investors (that investment from some countries is welcome while others are not), while also creating unnecessary complexity to the foreign investment framework. The Western Australian Government (sub. 54) suggested that a more consistent approach to foreign investment in agriculture would provide greater investor confidence and certainty.

In the Commission's view, there is a risk that the lower thresholds (combined with different thresholds depending on the country of origin of the investor) will increase the cost and complexity of investing in Australian agriculture — ultimately deterring foreign direct investment in the sector — without offsetting public benefits. It is unclear what additional public benefits will be derived from the lower thresholds, particularly given that other measures (such as the Register of Foreign Ownership of Agricultural Land) have been undertaken to increase transparency and public confidence about foreign investment in Australian agriculture. Lowering the screening thresholds is unlikely to be the most effective or efficient way of addressing community concerns about foreign investment in agriculture, particularly as some concerns appear to be misplaced and based on a misunderstanding of the effects of foreign investment (box 12.6).

Box 12.6 Concerns about foreign investment in agriculture

Public attitudes towards foreign investment in agriculture appear to stem from a variety of concerns, including that:

- *foreign investment will reduce Australia's food security*. This implicitly assumes that the food produced using agricultural land will be diverted overseas, resulting in less product choice and higher prices for Australian consumers. However, as noted by ABARES:

  > Australia has a high level of food security. Food is abundant, and Australia is highly self-sufficient as well as food secure, producing more than twice the amount of food it consumes. Although items that cannot readily be produced in Australia are purchased freely on world markets, imports amount to a relatively small proportion of food requirements. Australians have a high level of prosperity than most of the world's population and, with only a very small number of exceptions amongst disadvantaged groups, consumers can easily afford their food requirements. (Moir 2011, p. 13)

  Further, competitive globalised markets for agricultural products mean that price pressures (upwards or downwards) are likely to arise irrespective of whether Australian agricultural land is held by domestic or foreign interests, as producers will generally seek to sell their output in the market that provides the highest economic return.

- *foreign investment may result in a 'land grab' and loss of control over (prime) agricultural land*, which is a scarce non-renewable resource. At all times, the Australian Government retains sovereign control over all land and business activities that take place on Australian soil. Foreign investors operating in Australia are no exception. Also, land use activities are regulated (including for the purposes of addressing environmental impacts and effects on residents) in the same way regardless of ownership (chapters 2 and 3).

- *foreign investment makes it difficult for local producers to gain access to farm assets in the region* (in that local farmers who wish to purchase agricultural property are being priced out of the market by foreign buyers) (SRRATRC 2013). However, property owners will generally seek to sell to their property to the highest bidder — with the bid reflecting expectations of future returns on the asset — hence domestic vendors benefit from higher prices and increased ability to exit the industry when necessary. Government intervention that limits such market transactions distorts the efficient allocation of land resources in the economy (and prevents structural adjustment), resulting in adverse effects on the incumbent land owner and the wider Australian community.

- *foreign investment in agriculture will reduce employment in local and rural communities,* as foreign labour may displace Australian jobs (CEDA 2008; SRRATRC 2013; Alison Walpole, sub. 46). However, many farm businesses rely on overseas temporary workers to fill gaps in the local workforce, especially due to seasonal demand and lack of suitably skilled staff (chapter 10). Further, the experience of some high-profile cases of foreign investment in agriculture suggests that foreign investment can *increase* employment opportunities for locals in rural communities (Jasper, Felton-Taylor and Vidot 2016; Locke 2013). Foreign companies have an incentive to employ local workers as they are likely to have the necessary skills, knowledge and experience to help run their farm businesses (ABARES 2015c; Schwartz and McCarthy 2016).

- *Australian agricultural companies (particularly iconic companies) should be kept in Australian hands.* Australia has a long history of foreign investment in the agricultural sector, including major farm businesses and food brands (Spencer and Kneebone 2012). Many Australian agricultural companies were initially established as a result of foreign investment, which has generated significant benefits including bringing in new technology and business practices. Foreign investment is also particularly important in maintaining the continued existence of major Australian farm businesses that are in financial distress (Locke 2013). Without foreign investment, these companies may have collapsed.

Australia's lower screening thresholds for foreign investment in agriculture are also inconsistent with other government policy initiatives that actively seek to promote foreign investment in Australia. These include the work of the Australian Trade and Investment Commission (Austrade), which targets foreign investment in agribusiness and food as one of its five priority investment areas, and the Department of Foreign Affairs and Trade, which actively works to promote foreign investment in Australia (Austrade 2015; DFAT 2015a). Changes to the significant and premium investor visas (which commenced on 1 July 2015) are also part of the suite of Australian Government policy initiatives aimed at promoting foreign investment in Australian businesses and research and development (Austrade 2016a). Conflicting policy messages about Australia's openness to foreign investment in agriculture contribute to a climate of uncertainty for potential foreign investors.

The Commission considers that the Australian Government should increase the screening thresholds for foreign investment in agriculture to the level that they were prior to the changes in 2015. This would bring the arrangements for agriculture back in line with the thresholds that currently apply to business acquisitions and developed commercial land (for investors from non-preferential trade countries), while maintaining the additional transparency provided by the new Register of Foreign Ownership of Agricultural Land.

DRAFT RECOMMENDATION 12.1

The Australian Government should increase the screening thresholds for examination of foreign investments in agricultural land and agribusinesses by the Foreign Investment Review Board to $252 million (indexed annually and not cumulative).

Lack of data on foreign investment may be contributing to community concerns

Knowledge gaps on the extent of foreign investment in Australian agriculture could be contributing to public and industry concerns about foreign investment in Australian agriculture. The Coalition's 2012 policy discussion paper on foreign investment in Australian agriculture claimed that the:

> … knowledge gap is feeding public and industry concern about whether all approved foreign investment in the agricultural sector is not contrary to the national interest, especially set against the global and highly publicised phenomenon of significant pools of investment funds targeting the agriculture sector worldwide in recent years. (Liberal Party of Australia 2012, p. 10)

Media discussion about the acquisition of agricultural land and agribusinesses by foreign interests is likely to have further fuelled public concerns.

The Northern Territory Department of Primary Industry and Fisheries argued that there needs to be a further national conversation about foreign investment, and expressed

concern that a poor understanding about foreign investment could have a negative effect on expansion opportunities in agriculture.

> Given recent focus on foreign direct investment in the agricultural and related utilities sector, it appears there are grounds for further national discussion on foreign investment parameters and processes … Current Australian Government policy does not appear to be properly defined or well understood nationally and this could negatively affect the potential for agriculture businesses to take advantage of investment and expansion opportunities. (sub. 67. p. 2)

The Australian Government has a role in providing public information and fostering awareness and understanding about foreign investment in Australian agriculture.

The Register of Foreign Ownership of Agricultural Land is expected to provide greater public information on foreign investment in Australian agriculture.

> A national foreign ownership register for agricultural land will improve transparency of foreign ownership by providing the community with a more comprehensive picture of the size and location of foreign agricultural landholdings. This will contribute to public understanding … (Treasury 2012, p. 2)

Foreign investors must now give the Australian Taxation Office (ATO) notice of their holdings of agricultural land (regardless of the value of the land) within 30 days of the transaction. This includes purchases, sales and transfers of agricultural land, leases and licences. Specifically, foreign investors must provide details on the location, land title, land area, date of the event, market value, percentage interest and land use (ATO 2015a).

The ATO has undertaken an initial stocktake of existing levels of agricultural land ownership by foreign interests. The results of the stocktake conducted between 1 July 2015 and 29 February 2016 (showing foreign owned agricultural land as at 31 December 2015) will be published in the first report to the Australian Government, which is due in July 2016 (Joyce and Hockey 2015). It is expected that state and territory government land title registers will be automatically linked to the ATO's agricultural land register, subject to agreement by the states and territories. This is expected to minimise the regulatory burden on foreign investors, maintain accuracy of the register and reduce regulatory duplication (Treasury 2015d).

A number of participants to this inquiry agreed that the introduction of the register will help address public concerns about foreign investment in agriculture and inform government policy making. For example, the NFF said that:

> Collecting this data will aid policy development with regards to foreign investment into the sector by presenting a facts based picture of the investment ownership landscape. Additionally, such a register will assist in addressing community concerns around investment in Australian agriculture, where misconception is commonplace. (sub. 61, p. 31)

Similarly, Primary Producers SA commented that:

> … a register of overseas owned assets would be helpful from both a policy point of view, and also managing criticisms. There is an uninformed and loud view of the level of overseas ownership, and the profile therein [sic]. (sub. 41, p. 5)

That said, it is unclear why foreign-owned agribusinesses are not required to be on the national register, given that the register's stated purpose is to increase transparency of foreign investment in agriculture. Public concern appears to be directed at foreign ownership of both agricultural land and agribusiness (as partly reflected by the recent lowering of screening thresholds for both types of acquisitions). Indeed, the value of the first ABS Agricultural Land and Water Ownership Survey in 2011 was questioned because of the small number of agricultural businesses covered (less than 1 in 10) and that some small businesses were included (earning $5000 per year) (Liberal Party of Australia 2012). While it is likely that most foreign owned agricultural land is owned by foreign investors who run agribusinesses on the land, it is possible that some foreign-owned agribusinesses neither own nor lease agricultural land.

It is important that information publicly released from the register is effective in improving public awareness about the level of foreign ownership in the agricultural sector. The ATO is required to provide the Minister for Agriculture with a report on statistics derived from the register as soon as practicable after 30 June each year, which is to be tabled in Parliament and published on the ATO's website. The register itself is not expected to be made public (SERC 2016).

Unrestricted public access to the land register would achieve maximum transparency on the extent of foreign ownership in agriculture. In April 2016, the Senate Economics References Committee recommended that the Australian Government establish a publicly available land register to increase public confidence in Australia's foreign investment review framework and its effectiveness in protecting Australia's long-term national interests (SERC 2016).

However, complete and open public access to the register is likely to raise privacy issues, commercial sensitivities and national interest considerations (and therefore could discourage foreign investment) if full access identifies the details of individual owners or taxpayers (Treasury 2012). As a result, the ATO's reports will provide aggregated statistics and details on foreign ownership in agricultural land. This approach is consistent with other jurisdictions that already have similar registers for the foreign ownership of agricultural land, such as Queensland and the United States (QDNRM 2015; USDA 2016).

The information provided in the ATO's report will need to be sufficient to improve public understanding of the nature and extent of foreign ownership in Australian agricultural land. Following the release of the ATO's first report in July 2016, it will be necessary for the Australian Government to consult with industry and the public on whether the report provides sufficient information to address concerns and knowledge gaps about foreign ownership of agricultural land in Australia.

Application fees should be based on cost recovery

New fees for foreign investment applications (indexed to the consumer price index) were introduced on 1 December 2015. Previously, there were no fees and the cost of administering the foreign investment review framework was funded by general taxation revenue. The application fee must be paid before an application will be processed, subject to the Treasurer's statutory power to waive and remit fees. Although the fees are capped and payable per application, they vary by the type of investment and the value of agricultural land or agribusiness under consideration (table 12.3).

The fees are intended to recover the cost of administering the foreign investment system by the FIRB and the ATO, such as the cost of processing applications, data collection, monitoring, compliance and enforcement activities. The fees are also expected to provide the FIRB with additional resources to reduce assessment timeframes. The Treasury stated that:

> The revenue from application fees would be used to improve service delivery to foreign investors and would help offset the direct and indirect costs of managing the foreign investment regime. This includes the enhanced compliance and enforcement regime for the foreign investment in residential real estate and the establishment of a national register. The ATO will be funded to conduct more detailed audits and ensure proper compliance with the law. (Treasury 2015d, p. 54)

Charging a fee-for-service is consistent with Australian Government Cost Recovery Guidelines for government services as it can improve economic efficiency in the allocation of resources and promote equity (DoF 2014; PC 2001a). Cost recovery may enhance government efficiency as the FIRB is the monopoly provider of foreign investment review services and self-funding may promote greater administrative efficiency in processing applications. Investors who are charged for the cost of processing their application may also have a greater incentive to ensure the screening process is as efficient as possible (such as avoiding delays by providing sufficient information to the FIRB) to minimise their compliance costs (FIRB 2016b).

However, broader activities associated with administering the foreign investment framework for agriculture, such as data collection and dissemination, primarily benefit the Australian public in addressing their concerns about foreign ownership in agriculture and protecting Australia's national interests. The cost of such activities is unrelated to processing applications for foreign investment in agriculture and arguably falls outside the scope of full cost recovery. The Australian Financial Markets Association argued that:

> The government has noted that the proposed fees are also intended to cover the cost of broader regulatory functions, including data collection, compliance and enforcement activities, in addition to the application and approval process. Given that these activities are undertaken for the public benefit and not the direct benefit of foreign investors or resident vendors, it is more appropriate that these activities are funded through general tax revenue. (2015, p. 4)

The Treasury (2015c, p. 11) also acknowledged that there is 'limited evidence to suggest non-compliance in these areas [business, commercial real estate and agricultural investment applications]'.

Participants to this inquiry generally accepted the need for fees to be based on full cost recovery, but raised concerns that the current fees are higher than full cost recovery and are more like a tax on foreign investment in agriculture. For example, the CPC said that:

> The new charges imposed by the Government are not linked to the cost of administering the scheme. Rather they are a financial penalty, or a tax, that only applies to foreign investors. This direct cost or tax is in addition to the range of administrative and other costs incurred by applicants seeking to navigate through the FIRB approval process. (sub. 71, p. 20)

This assessment was shared by participants in the Treasury consultation process on changes to the foreign investment review framework. The RIS acknowledged these concerns, but justified the fees on the basis that they will have little effect on foreign investment activity.

> As the proposed fees are greater than the costs of administering the system, they could be viewed as potentially reducing Australia's attractiveness as an investment destination. However, the decision to invest in a particular country is based on a wide range of factors. Treasury considers that an application fee of less than 1 per cent of the value of the investment is unlikely to result in a material behavioural impact on foreign investment decisions. (Treasury 2015d, p. 53)

The actual burden of the fees depends on the amount of the fee charged and the value of the proposed investment. The fees (as a proportion of the value of the investment) are likely to be higher for proposals relating to agricultural land compared with agribusiness, particularly for small investments in agricultural land. For example, for a relatively small investment in agricultural land valued at $15 million (which triggers FIRB review), the fee of $100 000 represents 0.67 per cent of the value of the investment. In contrast, the $25 000 fee for an investment in a relatively small agribusiness valued at $55 million (which triggers FIRB review) would only represent 0.05 per cent of the value of the investment. As a result, the current fees may lead to some applicants cross-subsidising others, which could distort the composition of foreign direct investment inflows in favour of agribusiness rather than agricultural land.

Fees above cost recovery act as a de-facto tax and may therefore lead to 'deadweight' or efficiency costs of tax-related distortions to investment decisions (PC 2001a). High fees may deter foreign investment by increasing the transaction cost of investing in Australian agriculture (ITS Global 2008). Foreign capital flows are generally mobile internationally and there are many competing investment destinations for foreign capital in the agricultural sector. The discretionary nature of foreign direct investment also means that foreign investors can choose the associated regulatory burden (HRSCE 2014). Australia's Future Tax System Review (the Henry Review) noted that foreign direct investment in Australia is particularly sensitive to company income taxes, which lower the expected net return on a

proposed investment (Treasury 2009). Lower foreign investment may in turn lead to lower employment in the agricultural sector in the short term (Gali and Taplin 2012).

Decreased foreign investment could also have detrimental effects in the long term, such as a lower net capital stock, lower agricultural land and agribusiness prices, and consequential adverse effects on production, productivity and income (Gali and Taplin 2012; ITS Global 2008). These effects were not considered in the RIS. The distortions associated with fees greater than full cost recovery may also be larger in the medium to long term than in the short term, when the sale of agricultural land and agribusinesses is more responsive to changes in price. Therefore, the regulatory burden (and opportunity cost) of the fees may be higher than estimated by the RIS.

The level of fees that would only recover overhead and administrative costs of processing applications is difficult to determine, as data on the cost of administering the foreign investment framework is not publicly available. The only comparable figures were produced by the Parliamentary Budget Office for the House of Representatives Standing Committee on Economics report on foreign investment in residential real estate, which recommended that:

> The level of the fee should be such that it does not significantly deter future foreign property investment. It could be determined based on the value of the transaction, such as 0.1 per cent of the property investment value, but this would be difficult to administer. A simpler administrative arrangement would be a flat fee for every application. A fee of between $500 and $1,500 could be considered. Costings were provided by the Parliamentary Budget Office (PBO) for fees of $500, $1,000, and $1,500 and are included at Appendix C. (2014, p. 38)

While not directly comparable to residential real estate applications, current agricultural land and agribusiness application fees range from $5000 to $100 000 per application. The fees for agricultural applications are well in excess of the maximum $1500 suggested by the Parliamentary Budget Office for residential real estate applications. The Office assumed that there would be no behavioural impact given the small cost of the fee relative to the cost of purchasing residential real estate (HRSCE 2014).

The NZ Overseas Investment Office (OIO), the counterpart to the FIRB in Australia, charges application fees for foreign investment proposals based on a full cost recovery framework (LINZ 2016b, 2016c). The objective of the fees is to provide sufficient revenue to cover the OIO's operating costs so that investment applications are assessed with minimal delay. The fees for agricultural land and agribusiness applications range from NZ$22 500 (approximately A$21 400) and NZ$54 000 (approximately A$51 300), depending on the value and type of the proposed investment, and whether the investment is considered by the OIO or the Minister for Finance (LINZ 2016d). These fees were recently increased for a number of reasons, including to correct for under-recovery of costs and address inequity, as some applicants cross-subsidised others (LINZ 2016c).

The Commission's view is that application fees should be set at the level that recovers the FIRB's costs of processing foreign investment applications, and closely monitored to ensure no under- or over-recovery of costs. Fees that exceed cost recovery are

unnecessarily high, and may deter foreign investment and impede productivity growth in the agricultural sector.

DRAFT RECOMMENDATION 12.2

The Australian Government should set application fees for foreign investment proposals at the level that recovers the costs incurred by the Foreign Investment Review Board in reviewing proposals, and should closely monitor the fees to ensure no over- or under-recovery of costs.

Transparency of the FIRB review process

The FIRB's recommendations and advice to the Treasurer are not publicly available. However, the Treasurer's decisions (including brief reasons) are generally published on the Treasury website, particularly for large proposals that are already in the public domain. The Treasurer also generally indicates whether the decision was in accordance with the FIRB's recommendation, which has been the approach in recent decisions (for example, Hockey 2013a, 2013b, 2015; Morrison 2015, 2016a).

Participants to this inquiry raised concerns about the lack of transparency, particularly with regard to the application of the 'national interest' test. For example, the NFF suggested that:

> … what constitutes the National Interest Test must be publicised to the greatest extent possible to ensure both the sector and investors clearly understand the criteria their applications will be assessed against. (sub. 61, p. 31)

To increase certainty and reduce confusion, the NFF (sub. 61) further suggested that the FIRB and/or the Treasurer publish more detailed reasons for decisions, including the weights given to each factor, in a fashion similar to court judgments where this does not breach commercial confidentiality requirements. This view is supported by the recent inquiry into the foreign investment review framework by the Senate Economics References Committee, which found that the transparency of the review process could be improved (SERC 2016). It made the following three recommendations:

- The Treasury should publish public guidance on the foreign investment review assessment process, including information on some of the steps and key features of the process.
- The Treasury should publish the Treasurer's reasons for all its decisions regarding foreign investment, in order to inform the public, and to instil public and investor confidence in the review process.
- The Australian Government should establish a publicly available Agricultural Land Register for all foreign-owned agricultural land to increase public confidence in the

foreign investment review framework and its effectiveness in protecting Australia's long-term economic and security interests.

The Committee concluded that lack of transparency in the foreign investment review process and its outcomes (combined with the inconsistent thresholds for agricultural land and agribusiness) may 'serve as a disincentive to foreign investors and continue to undermine public confidence in foreign investment in Australia' (SERC 2016, p. 51).

Transparency is important because it can promote investor certainty and community confidence that Australia's national interest is being adequately protected. It may also make it easier for the Treasurer to ascertain public preferences, which may be important in deciding whether a foreign investment proposal in the agricultural sector is contrary to Australia's national interest (SERC 2016). However, there are reasons why full transparency in the FIRB's review process is unlikely to be possible. A foreign investment application could involve sensitive information relating to Australia's national security or strategic interests (Treasury 2012). It also typically includes foreign investors' confidential personal or commercial information, which is protected by law (FIRB 2016b).

There appears to be greater transparency around foreign investment decisions in New Zealand. The NZ OIO publicly releases short summaries of all decisions online, including the factors that were taken into account, in accordance with the provisions of the *Official Information Act 1982* (NZ) (LINZ 2016a).

In contrast, there is less transparency in North America. The Committee on Foreign Investment in the United States does not publish its advice to the President (Jackson 2016). And Industry Canada (when providing advice to the Minister of Industry) only lists details of the foreign investor and its Canadian business (Industry Canada 2016).

Although full transparency is unlikely to be possible, greater transparency (to the extent that is consistent with national interest considerations) is important to help inform the public about foreign investment in agriculture. To this end, the introduction of the Register of Foreign Ownership of Agricultural Land may also go some way towards increasing transparency and alleviating public concerns about foreign investment in agriculture.

13 Export regulation

Key points

- Australia's agricultural sector has historically been, and continues to be, highly dependent on, and exposed to international trade. The sector benefits from open markets with minimal entry requirements into other countries.
- Australian agricultural producers are price takers in global markets. This limits their capacity to pass on costs to consumers and means that unnecessary regulatory burdens and other trade restrictions on exports can significantly affect agricultural producers' international competitiveness.
- The Australian Government has a role in export certification — to assist agricultural exporters meet importing country requirements and to protect Australia's reputation as a reliable and safe supplier of agricultural exports.
- Participants' concerns about export certification related to user charges for export certification services; processing delays; duplication between Australian and importing country requirements; and excessively strict domestic requirements (relative to importing country requirements).
- Australia's agricultural exporters could benefit from greater private sector involvement in certification processes as well as harmonisation between Australian and importing country requirements.
- Concerns about the efficiency of export certification processes can be addressed by:
  - the Australian Government's continued implementation of full user cost recovery guidelines to ensure export certification services are provided at minimum cost and delay
  - ongoing review, reform and negotiations on importing country requirements with governments of other countries.

Australia's agricultural sector is highly dependent on, and exposed to, international trade. The sector has been exporting its produce for almost two centuries (Australian Government 2015b). About two–thirds of Australia's agricultural production is exported, generating export revenue of about $44 billion in 2014-15, or 14 per cent of total export revenue (ABARES 2015a; ABS 2015c; DAWR 2016i). Major agricultural exports include meat, livestock, grains, oilseeds and wool. The sector's top five trading partners are China, the United States, Japan, Indonesia and South Korea (ABARES 2015a).

Australian agricultural producers are price takers in global markets and therefore have limited capacity to pass on costs to consumers. This means that unnecessary regulatory burdens on agricultural exports can significantly reduce the international competitiveness of Australian agricultural producers.

This chapter looks at the regulation of agricultural exports and the effect it has on the international competitiveness of the Australian agricultural sector.

13.1 Regulation of agricultural exports

Australian agricultural exports are affected by trade protection and technical barriers to trade imposed by other countries.

- Trade protection includes tariffs, export subsidies, import quotas, export taxes, local content requirements, export credit subsidies, national procurement and voluntary export restraints (Krugman, Obstfeld and Melitz 2015; Vousden 1990).
- Technical barriers to trade (such as importing country requirements) are directed at achieving domestic policy objectives such as biosecurity, animal welfare, environmental protection and food safety (DoA 2015a; WTO 2014).

The distinction between importing country requirements and trade protection is not always clear (AFGC 2015; Krugman, Obstfeld and Melitz 2015). Although the objective of particular policies may not be to impede international trade, they can have the incidental or unintended effect of protecting local producers from international competition.

While participants raised concerns about the cost of exporting agricultural produce, many of the concerns were about international barriers to export imposed by other countries. For example, the Australian Meat Industry Council stated that technical barriers to trade are significant:

> Poor trade outcomes in market access … [have] been issues. We applaud the government negotiation of free trade agreements (FTA's) … FTA's however only address import tariffs. The meat industry, as a producer of a time and temperature sensitive product, has a high exposure to technical barriers to trade. These technical barriers can undermine any tariff benefits. Unless they are addressed with the same priority as tariff reductions, technical barriers to trade can add huge cost, reduce productivity and limit overall market access. (sub. 77, pp. 3-4)

The Australian Food and Grocery Council estimated technical barriers to trade result in an annual loss of $1.25 billion for the red meat export industry (AFGC 2015). Similarly, Australian Dairy Farmers claimed that the annual loss to the dairy export industry as a result of technical barriers to trade to be $1.57 billion:

> … when aggregated, the impact of TBTs [technical barriers to trade] on the Australian dairy industry is staggering. In many instances addressing these TBTs in key markets could produce gains even more beneficial to the industry than just tariff reductions. The Australian dairy industry is presently unable to seize major competitive advantages (like strong food safety, credible domestic regulators and reliable cold storage supply chains) because of international standards and requirements that are incoherent with those of Australia. There is even consistent feedback from Australian dairy exporters about "losing interest" in doing business in foreign markets as a response to frustrating TBTs. (sub. 63, p. 8)

The challenge is that the barriers relate to domestic legislation and policy frameworks in the export destination country, both at and behind the border. As such, the removal of barriers to export requires commitment and action from both Australian and foreign governments.

International negotiations and trade agreements can play an important role in reducing international trade barriers to Australian agricultural exports. The greatest benefits of trade liberalisation (including enhancing market access for Australian agricultural exporters) would be realised from multilateral trade agreements on a non-discriminatory basis (PC 2010a, 2014e). While bilateral or regional trade agreements can also provide market access benefits, they can involve offsetting economy-wide costs due to complex rules of origin and 'trade diversion' (where goods originally imported from lower-cost countries are displaced by goods from higher-cost countries due to lower trade barriers, such as reduced tariffs, faced by the latter group) (PC 2010a, 2014e).

The Australian Government recently negotiated a number of agreements to reduce barriers to trade for the agricultural sector. For example, as a result of government-to-government new market access agreements:

- in January 2016 the first exports of goat meat were sent to India, and egg and egg products were sent to Taiwan
- a range of poultry products (hatching eggs and live day-old chickens) can now be exported to Thailand and Indonesia (DAWR 2016a, 2016p; Joyce 2016b).

International negotiations will continue to be important in further reducing barriers to export for Australian agricultural producers. Importing country requirements are also affected by Australia's national biosecurity system (chapter 7).

The role of government in export certification

The Australian Government's Department of Agriculture and Water Resources (DAWR), commenting on agricultural export legislation, said it:

> … enables the department to oversee the export supply chain and provide assurance to Australia's trading partners that their specific requirements for exported goods have been met. This underpins Australia's reputation as a reliable supplier of quality products and has helped us capture and maintain overseas markets. (DAWR, sub 50, p. 8)

Under the current framework there are 21 Acts — including the *Export Control Act 1982* (Cwlth) and the *Australian Meat and Live-stock Industry Act 1997* (Cwlth) — and over 40 pieces of delegated legislation (including regulations, orders and declarations) (DAWR, sub. 50). The legislation sets out the requirements, conditions and controls that govern the export of agricultural goods from Australia. It also provides for enforcement of the regulations. For example, officials are given legal authority to carry out inspections and certification activities, including audit and verification, along the export supply chain (DoA 2015a).

Government certification was widely accepted by participants to this inquiry as necessary for access to export markets — to meet importing country requirements and Australia's obligations under international agreements.

The Australian Meat Industry Council, for example, acknowledged the government's role in assisting exporters meet importing country requirements:

> In formulating the proposed changes to the inspection, certification and verification system for meat exports we should recognise that: certification and system verification remains a function of the central competent authority (DAWR). The delivery of the inspection service is dependent on what the markets will accept … (sub. 77, p. 10)

Similarly, the Sheepmeat Council of Australia and the Cattle Council of Australia pointed out that:

> … export registered [beef and sheepmeat processing] plants must meet additional regulations set by the Commonwealth which relate to importing country requirements and observance of these bilateral agreements underpins Australia's premium market access worldwide. (sub. 88, att. 1, p. 67)

The Voice of Horticulture also noted that it:

> … understands that the Australian Government imposes export regulations on horticulture to reassure trading partners that Australian agricultural products meet import requirements and are fit for purpose. (sub. 42, p. 46)

Australian government export certification is effective. In 2014-15, less than 1 per cent of government certified export consignments were rejected by importing countries for failure to meet their requirements (DoA 2015b).

13.2 The regulatory burden of export certification

Export certificates in paper form are usually provided to importers and are required for import clearance in the destination country. Certificates generally relate to food safety, animal health, human health, plant health and product integrity conditions, and may include details to meet specific importing country requirements, such as the date and specific boning room of an abattoir where meat was slaughtered (DoA 2015a; PC 2009). For example:

- Horticultural and grain exports will usually require a phytosanitary (plant health) certificate to assure that the goods are free from pests, soil, weed seeds and extraneous material. Meat and meat product exports (including live animal exports) may need organic or halal certificates, and health certificates that certify that the goods are free from specific diseases and fit for human consumption (DoA 2015a).
- Separate export certificates may also be issued to meet any specific and additional declaration, or importing country endorsement, requirements (DAWR 2015q; DoA 2015a). Of the 160 countries that receive Australian meat exports, 138 countries

require measures additional to certification by DAWR and the requirements for compliance with Australian meat standards for hygiene and safety for human consumption (ANZFRMC 2007; PC 2009).

Farm businesses incur both direct and indirect costs from export certification, often before export transactions are finalised:

- direct costs include government user charges, time, financial and administrative costs of compliance
- indirect costs could include lost export opportunities resulting from delays in the certification process, or use of alternative (less efficient) measures to reduce the costs of compliance. For example, instead of having their produce directly certified for export, agricultural producers can send their produce to a bulk exporter, where the goods are subject to bulk inspection. While bulk export reduces the costs of complying with exporter certification regulations, it also leads to double-handling and potential damage to the produce, ultimately reducing the price importers are willing to pay. This was the experience of one large horticultural business that the Commission interviewed (appendix C).

Australian Pork Limited said that the costs of export certification are significant and that it:

> … supports any initiatives that reduce the costs to the pork industry and its supply chain and which reflect the actual cost of the export certification process. Pork export establishments have advised APL [Australian Pork Limited] that one of the most significant cost impacts they face is that of audit fees. It is therefore of considerable concern that under the Cost Recovery Implementation Statement (CRIS) the fee structure for audits detailed in the Draft CRIS show no change in the cost per quarter hour, however pork establishments are reporting increased time to undertake individual audits. (sub. 37, p. 5)

The efficiency of the export regulatory system is the subject of review and reform by DAWR (box 13.1).

Concerns about export certification raised by participants in this inquiry related to user charges for export certification services, processing delays, duplication between Australian and importing country requirements, and excessively strict domestic requirements relative to importing country requirements.

Box 13.1 Australia's agricultural export regulation is under review

Agricultural export certification legislation is currently under review by the Department of Agriculture and Water Resources (DAWR). Stage 1 of the review (conducted during July-September 2015) found that while the legislation had served agricultural exporters for more than 30 years, there was scope for improvement. On 3 December 2015, the Australian Government announced that it would 'make improvements to agricultural export legislation to better support farmers and exporters, and facilitate market access into the future' (DAWR, sub. 50, p. 8).

Stage 2 of the review, which will take place over the next few years (before 1 April 2020, when the legislation will 'sunset', or cease to be law), will involve reforms to the legislation to reduce the regulatory burden on farm businesses, including:

- a simpler legislative structure that is easy to understand and administer. For example, it will include creating a single set of requirements (such as those relating to audit and establishment registration)
- providing a more effective set of enforcement tools to deal with breaches or non-compliance
- clearer provisions for the performance of verification activities (such as audits and inspections) across the supply chain
- clearer requirements relating to the appointment and duties of departmental and third-party authorised officers who perform functions and exercise powers under the legislation (DAWR 2016m).

Cost recovery arrangements and livestock export certification are also currently the subject of separate reforms by DAWR (DAWR 2015b, 2016e; DoA 2015a; DAWR, sub. 50). The Department of the Environment is currently in the process of reviewing and reforming the wildlife export system to address instances of what appears to be, in its view, excessively strict regulation of export permits for commercial wildlife (such as kangaroo and emu products) (sub. 80).

Certification user charges and processing times

Certification user charges

DAWR conducts export certification on a full cost-recovery basis. Export certification fees are based on the costs of assessment, inspections and audit, incident management (including investigation support and corrective action), program management and other administration activities (DoA 2015b). A proportion of the fees is also levied to recover expenses for marketing and foreign market access arrangements (PC 2009; Whittle et al. 2015). In 2014-15, DAWR collected about $121.4 million in user charges for its export certification and supporting services (DoA 2015b).

Some participants expressed dissatisfaction with current cost recovery arrangements. For example, the Australian Meat Industry Council said:

> The return … to full cost recovery for government inspection services and export certification has meant the [meat] industry is now faced with an annual bill exceeding A$85 million a year

> and rising in order to raise a health certificate for each shipment. These are not costs faced by our major competitors such as the United States and Brazil … (sub. 77, p. 4)

Similarly, the Sheepmeat Council of Australia and Cattle Council of Australia argued:

> [Sheepmeat and beef] processors assert that export certification is one of [the] 3 largest costs for their operations and has become unwieldy and inflexible [which] may put them at a financial disadvantage against competitors. Government should absorb more of the cost … (sub. 88, p. 65)

AUSVEG in its submission to DAWR's agricultural export regulation review also raised concerns about certification costs:

> In regard to regulatory burden, the cost of certification, registering as a Registered Establishment and training staff as Authorised Officers for the volume of exports that are undertaken by smaller growers are entirely cost prohibitive. (2015a, p. 8)

Cost recovery charges can promote efficiency in the delivery and use of export certification services. They provide signals to exporters about the costs of the resources involved in providing certification services and may influence exporters' decisions about which export market to target (Beale et al. 2008; PC 2001a). To the extent that cost recovery reduces the government's need to draw down on general taxation revenue, the 'deadweight' or efficiency losses of distortions arising from higher general taxation can be avoided (PC 2001a).

Provided there are no significant spill-overs or public good characteristics, exporters who directly benefit from the export certification process and supporting services (such as DAWR's export programmes and market access arrangements) should incur the cost of the service (PC 2001a; Whittle et al. 2015) Cost recovery means that 'Australian exporters who earn income from overseas markets because of regulatory services provided by the Australian government are not asking Australian taxpayers to fund the health and biosecurity protection of the citizens of other countries' (Beale et al. 2008, p. 195). This is consistent with the Australian Government Cost Recovery Guidelines (DoF 2014).

Most participants to this inquiry accepted the full user cost recovery framework, but argued that user charges were unnecessarily high, and expressed concerns that certification is used as a revenue source, or to support inefficient service provision (Australian Meat Industry Council, sub. 77; Australian Livestock Exporters' Council, sub. 78; Sheepmeat Council of Australia and Cattle Council of Australia, sub. 88). The Australian Livestock Exporters' Council noted that:

> Under the cost recovery arrangements for the live trade, all costs associated with certification and ESCAS [Exporter Supply Chain Assurance System] are 100% recovered from exporters, regardless of whether the services provided or the regulatory system on which those costs are assessed is efficient, effective or appropriate. (sub. 78, p. 34)

The Commission did not find any evidence to suggest that export certification charges are recovering more than the cost of providing certification services, although this does not

mean that the efficiency of certification services cannot be improved. ABARES found that Australia's export certification fees are roughly commensurate with those of our main competitors in agricultural export markets,[62] but noted that it may be difficult to compare due to differences in cost recovery arrangements (Whittle et al. 2015).

Certification processing times

Participants also raised concerns about the time required to obtain export certification. The Export Council of Australia stated that:

> There are many steps involved in getting agricultural products approved for export and multiple touchpoints with government along the way. While some processes have moved to an online, self-regulated system, other manual administrative steps remain a necessity, which can cause delays and additional costs. (sub. 74, p. 5)

Such delays may be particularly costly for farm businesses exporting perishable produce or live animals. The Australian Food and Grocery Council said:

> … a number of companies report that government documents required by companies for exporting will only be sent by government through the mail. This results in unnecessary delays to export shipments and is a particularly important issue for fresh, perishable products [sic]. (sub. 28, p. 19)

It also identified long and variable timeframes for approval to meet importing country certification requirements as a 'common challenge' across the agri-food export sector (AFGC 2015, p. 10).

The Commission previously found that there was scope for improved communication methods to reduce delays, particularly through greater use of electronic processing (PC 2009). DAWR is gradually moving to electronic processing of certificates and is working with Australia's trading partners to develop and refine an electronic government-to-government export certification system to replace manually issued paper based certificates via 'EXDOC'. This is in addition to existing electronic systems maintained by DAWR, such as 'eCert' (for food and agricultural exports) and 'TRACE' (for livestock exports) (DoA 2015a).

Increased private sector involvement in export certification processes

Greater private sector involvement in export certification has the potential to increase efficiency and reduce the cost of certification. A number of participants to this inquiry (including Australian Dairy Farmers, sub. 63; Australian Livestock Exporters' Council, sub. 78; Australian Meat Industry Council and Voice of Horticulture, sub. 42) and to DAWR's review of agricultural export regulation proposed a greater role for the private

[62] New Zealand, the United States, Canada, Chile, Thailand, the Netherlands, Germany, Ireland and Poland.

sector in the export certification process. For example, the Voice of Horticulture recommended:

> … That co-regulatory approaches between industry and government be adopted where these offer similar outcomes at lower cost (e.g. use of 'in-house' export inspection processes instead of defaulting to government monopoly priced inspection, legislation and formal regulation). (sub. 42, p. 4)

Private sector involvement could include the agricultural export industry conducting its own certification processes or engaging third-party private providers. The use of third-party providers of inspection, verification, testing and certification services, such as Société Générale de Surveillance and Bureau Ventas (Bureau Veritas Australia & New Zealand 2016; SGS Australia 2016), may provide scope to increase efficiency and reduce costs for industry (World Bank Group 2016).

There are already some options for private sector involvement in export certification. Under the Export Control Act, eligible agricultural exporters may apply to have risk-based 'Approved Arrangements' to streamline the export certification process (which may reduce the number of audits and inspections, and therefore costs) and to have non-departmental authorised officers (AOs) carry out certain export certification functions (plant and meat exports only). 'Approved Arrangements' currently apply to all 'prescribed goods' under the Export Control Act and related legislation (dairy, egg, fish, meat/meat products, organic/biodynamic products and livestock exports) (DAWR 2015i; Joyce 2016a). The use of AOs usually requires exporters to have the resources and capacity to have an employee act as an AO.

The Commission generally supports greater private sector involvement in export certification services as it is likely to lead to increased efficiency and innovation, and promote competition among third-party certification service providers. However, there are two potential hurdles that may need to be overcome to achieve greater private sector involvement for some export markets.

- Importing countries may insist on government control of export certification functions for some goods (such as for meat and meat products, live animals, wine and some plant products) (DoA 2015a).
  - Only eight countries[63] have accepted external AOs for the certification of plant exports (DAWR 2016r) and importing countries generally only recognise a small number of third parties as authorised halal certifiers for meat exports (SERC 2015). The United States also requires DAWR to undertake audits of establishments that prepare or store meat for export, and issue health certificates for livestock exports (Austrade 2016b; DAWR 2016c).
  - Greater private sector involvement ultimately requires other countries' agreement. Ongoing government efforts are being made in this regard (DoA 2015a) and there have been some recent successes. For example, the use of external AOs for plant

[63] China, Japan, South Korea, New Zealand, Taiwan, Thailand, the United States and Vietnam.

exports commenced on 1 October 2015 as a result of DAWR negotiated technical market access arrangements; and on 9 March 2016, the Australian Government announced plans to invest $800 000 to increase the number of industry-based plant export AOs by more than one third (DAWR 2015m, 2015n; Joyce and Ruston 2016; Joyce 2015a).

- Despite exporters having commercial incentives to comply with export certification requirements to be able to export and to maintain their reputation, there may be an increased risk of non-compliance and as a result, higher failure rates from increased private sector responsibility for certification functions.
  - There is a risk of conflict of interest associated with AOs drawn from industry (such as employees), as they may feel pressured not to give adverse assessments even in circumstances when they are required to do so under the legislation. This is notwithstanding a requirement of appointment that they have no unresolved conflicts of interest (DAWR 2015l, 2016k). The Community and Public Sector Union said 'the majority of these [AO] inspectors are directly employed by the companies that they are inspecting for … There have also been reports of some AOs leaving one company because of undue pressure to do the wrong thing' (sub. 6, pp. 4–5).

Any change that compromises the current system's ability to maintain high rates of approval from importing countries (and therefore Australia's reputation) needs to be carefully considered. That said, there are likely to be cases where these risks are less pronounced, particularly where industry standards (for example, the requirements of importing businesses or quality assurance systems) incorporate and/or exceed importing country requirements (DoA 2015a).

The Commission supports greater private sector involvement in export certification, but notes that this requires government-to-government negotiation for importing countries to recognise and accept private certification. DAWR will also need to evaluate this option on a case-by-case basis to ensure that risks of non-compliance and conflicts of interest are adequately addressed.

Duplication between Australian and importing country requirements

The terms of reference for this inquiry ask the Commission to consider ways of minimising duplication between domestic regulation and importing country requirements. Inquiry participants did not raise significant concerns in this regard, although in its submission to DAWR's agricultural export regulation review, AUSVEG suggested that:

> … there is a degree of overlap between these two certificates [Certificate of Origin and Australian Phytosanitary Certificate] and … a single certificate that satisfies all requirements could reduce the level of 'red tape' that exporters must comply with. (2015a, p. 8)

This type of duplication is being looked at in DAWR's current review and reform of agricultural export regulation (box 13.1). There are also ongoing diplomatic processes and efforts aimed at reducing duplication, through harmonisation and mutual recognition, as part of government-to-government and preferential trade agreements. For example, under the Trans-Tasman Mutual Recognition Arrangement between the governments of Australia and New Zealand, the food safety systems in both countries covering dairy products, seafood, uncooked pig meat, chicken meat, coconut, pepper, paprika, peanuts and pistachios were determined to be equivalent. This led to the removal of the requirement for border inspection for these agricultural goods (DAWR 2016l).

Domestic requirements set higher than importing country requirements

The high cost of complying with Australian standards for agricultural exports, where they are higher than importing country requirements, was raised by participants to this inquiry. For example, the Voice of Horticulture noted:

> The phytosanitary export requirements imposed upon Australian exporters appears to be much tougher than those imposed by some of Australia's competitors. For example, Australia requires that exporters apply a universal standard that consignments are free from pests, soil, weed seeds and extraneous material … This minimum standard applies to all export destinations including those countries that do not possess individual phytosanitary importation requirements. (sub. 42, p. 50)

Similar concerns were expressed by the Pastoralists and Graziers Association of Western Australia in relation to organic certification of agricultural exports:

> Third party organizations are accredited by the department to certify produce with organic, biodynamic, biological or ecological trade descriptions in compliance with the National Standard for Organic and Biodynamic Produce. The current 'organic' standard has a zero percent tolerance for genetically modified organisms, when the US standard is 5% and the EU standard is 0.9%. (sub. 70, p. 10)

This situation can also arise where only a proportion of production is exported to countries with higher standards (such as the European Union and the United States), and it is too costly or not possible for the business to segment their production for different markets (PC 2009).

Under the current approach, Australian export standards are generally set at the level required by importing countries. In response to the National Competition Policy Review of the Export Control Act, the Australian Government agreed to use Australian standards as the basis for the underlying standard for all exports (Tier 1) (Australian Government 2000; Frawley et al. 1999). Standards set by overseas governments (Tier 2) and market-specific requirements in addition to domestic standards (Tier 3) would only apply to producers wishing to access those markets (Australian Government 2000).

There may be legitimate reasons why Australian standards are set higher than importing country requirements. Australian standards may be designed to meet domestic policy objectives relating to agricultural production and consumption, as well as to meet binding internationally agreed standards, such as the World Trade Organisation Agreement on the Application of Sanitary and Phytosanitary Measures (WTO SPS Agreement) (DoA 2015a; Guasch et al. 2007).

Australian standards may also be set to ensure agricultural exports meet importing country requirements across the board for all countries for administrative efficiency reasons. This means that all agricultural exporters would be required to meet the highest standard, regardless of the export destination country (DoA 2015a; Frawley et al. 1999). The certainty and simplicity of one standard may not only benefit consumers in the destination market, but also exporters, as there may be cost savings from not having to search for specific importing country requirements. Indeed, the costs of complying with Australian standards may also partly depend on the exporter's choice of overseas markets, which is a commercial decision (PC 2009).

Ongoing review of this issue by DAWR will help ensure that the benefits of having a single standard, including administrative efficiency gains for the Australian Government, outweigh the additional costs imposed on exporters from meeting higher standards in some cases, and therefore deliver a net benefit to the Australian community.

14 The way forward

Key points

- Concerns raised by farm businesses about the cumulative burden of regulation are justified. The burden comes from the quantity, diversity and complexity of regulations that apply to farm businesses — farmers spend a lot of time complying with and keeping track of changes in regulation. There is also the added dimension of farm businesses needing to comply with the multiple regulations administered by numerous agencies, often across several jurisdictions.
- The design of many regulations, and the way they are implemented, can also be incompatible with farming practices (adding to the regulatory burden experienced by farm businesses). For example, some regulatory requirements may not afford the flexibility needed to adapt farming operations to changes in market and seasonal conditions. Regulators are also increasingly requiring businesses to interact via the internet, which typically requires access to high speed and reliable broadband services. Such services can be patchy in rural areas where farm businesses operate.
- This inquiry found many examples of duplicative, inconsistent and overlapping regulation between the three tiers of government (including in the areas of the environment, animal welfare and heavy vehicle regulation). Recognising and effectively managing inter-jurisdictional and inter-agency coordination should be an integral part of the regulatory process.
- Regulators can become overly risk averse, inflexible and prescriptive in their approach. There is a question as to whether regulators in some areas, such as gene technology, agricultural chemicals and environmental regulation, are too narrow in their focus and whether there is scope to give more weight to broader social and economic considerations.
- Regulations introduced in response to public perceptions can be a source of unnecessary regulatory burden. Where a credible evidence base exists, it is important that governments marshal and promote this rather than reach for regulatory (or other policy) solutions to address public concerns.
- Poor regulatory outcomes can often be traced back to poor regulation making practices. Regulation impact assessment (RIA) processes are not living up to their potential for supporting good regulation making. The Commission is seeking information on possible strategies and governance arrangements to improve the incentives for policy makers to use RIA processes as a genuine analytical tool, rather than as a legitimising tool or compliance exercise.

This inquiry has looked at the 'stock' of regulation affecting the agriculture sector and identified a number of regulations that are imposing an unnecessary burden on farm businesses.

Many of the recommendations in the preceding chapters of this report will benefit farmers (and the wider Australian community) by reducing the overall regulatory burden. Although the recommended reforms are clearly not all of equal weight, reducing or eliminating unnecessary regulatory costs, even if those costs are relatively small, will help to dismantle the cumulative burden of regulation (a major concern of farm businesses, chapter 1).

The current stock of regulation is the result of a regulatory cycle — a cycle that begins with a perceived economic or social problem and is followed by governments deciding on the form of action to take, and how regulation (if required) will be administered and enforced. Examining the stock of regulation affecting farm businesses has not only uncovered areas for reform, it has also provided some useful insights into the way regulations have come about, the assessment process they were subjected to, and the way they were implemented and are applied and enforced. It would be unfortunate if efforts to remove current regulatory burdens were later undermined by new regulation adding unnecessary regulatory burdens.

Improving the existing stock of regulation is critical to improving the competitiveness and productivity of farm businesses (and outcomes for the wider community). But equally important is addressing systemic problems within the regulation making process so that the flow of new regulations does not repeat past regulatory mistakes.

This chapter outlines what the Commission has learnt through this inquiry about the nature of the regulatory burden experienced by farm businesses (section 14.1). It also considers what some of the systemic or root causes of unnecessarily burdensome regulation are, and some possible options for addressing these (section 14.2).

14.1 The nature of the regulatory burden facing farmers

Concerns raised by farm businesses about the cumulative burden of regulation are justified. The main reasons for the regulatory burden experienced by farm businesses are the quantity, diversity and complexity of regulations that apply to them, and the incompatibility of regulation with farming practices (chapter 1, appendix C).

The breadth of regulation covered in previous chapters gives an indication of the number (and complexity) of regulations that can and do apply to a farm business — land use, environment, water, animal welfare, biotechnology, chemicals, biosecurity, transport, food regulation, labour, workplace health and safety, competition, investment and trade. This stock of regulation imposes a particularly heavy burden on small farm businesses (who have less capacity to comply and keep up with regulatory requirements and changes).

There is also the added dimension of needing to comply with numerous regulations and agencies, sometimes across multiple jurisdictions. The Consolidated Pastoral Company, Australia's largest private beef producer (operating 20 stations across Queensland, Western Australia, and the Northern Territory), estimated that it complies with, or takes account of,

327 Acts, regulations and codes (including 46 environmental Acts and regulations across four jurisdictions). It also noted that:

> The wide range of laws, regulations and codes, and the complexity of some of these regulatory systems, across not only three tiers of Government but also between the three northern jurisdictions of Western Australia, the Northern Territory and Queensland unnecessarily adds to the cost of doing business for northern beef producers. (sub. 71, p. 3)

The inquiry also revealed ways in which the design of regulation and the way it is implemented can be incompatible with the nature of farming.

- The market and seasonal demands on farm operations can be incompatible with some regulatory requirements. For example, when it rains and farmers decide to start planting, machinery needs to be moved quickly, but obtaining a permit (sometimes multiple permits) to move oversized machinery using public roads can cause costly delays. As the NSW Farmers' Association said, 'during the time sensitive planting window the period of time required prior to approval constitutes a major cost to a farmer's productivity, or to a contract planting operator's ability to work' (sub. 72, p. 23).
- Regulations are often designed with the operation of other industries (like manufacturing) in mind, making them incompatible with the operating conditions of farming businesses. For example, environmental regulations relating to noise, odour, air emissions and waste discharge can affect the productivity of certain agricultural activities (particularly intensive livestock facilities).
- Many regulators assume that businesses have access to high speed and reliable internet services, but often this is not the case in the rural areas where farm businesses operate.

14.2 Systemic regulatory problems and inquiry themes

Many themes and systemic regulatory problems emerged through this inquiry. Some are more general regulatory problems, while others are more specific to the agriculture sector. A number of these could be described as 'wicked' problems (Rittel and Webber 1973) — that is, they are problems with no obvious or practical solution. These issues can only be effectively managed in the long term by making fundamental changes to the problems regulation is used to solve, and the way it is designed and implemented. Understanding the sources of unnecessary burdens can better inform regulation making processes and in turn improve regulatory outcomes in the future. In some cases, changes in institutions and governance arrangements may be required.

Coordination between jurisdictions and agencies

Based on what individuals, farm businesses and agricultural organisations told the Commission about their lived experience of dealing with regulation, it is clear that the overlay of different agencies and levels of government adds complexity and cost to doing

business. Again, this is partly because farmers face regulations across many areas and their farm operations and value chains can span borders.

This inquiry found many examples of duplicative, inconsistent and overlapping regulation between agencies and across the three tiers of government:

- *environment* — in some cases landholders are required to obtain approval for proposed actions under both the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) and state native vegetation regulations
- *animal welfare* — inconsistent regulation makes it difficult to effectively inform and educate consumers, and inconsistent standards create uncertainty for industry
- *water* — overlapping Australian and state government responsibilities in the management of water resources with the *Water Act 2007* (Cwlth) and the Murray-Darling Basin Plan result in duplicative reporting requirements
- *chemicals* — duplication of approval and registration procedures for agricultural and veterinary (agvet) chemicals between and within agencies, and incomplete use of international evidence, is reducing the options available to, and hence the productivity of, farm businesses
- *heavy vehicle access regulations* — differences across the road network lead to increased compliance costs for producers, including costly changes to vehicle configurations and loads to meet different requirements.

Part of the solution to the problems of duplication, inconsistency and overlapping regulation is to take into account the activities of other tiers of government when regulations are proposed and developed. Considering whether harmonisation or greater national consistency would be desirable is another part of the solution.

Recognising and managing inter-jurisdictional and inter-agency coordination should be an integral part of the regulation impact assessment (RIA) process (discussed below). When new regulations are put in place the focus is typically on addressing the perceived problem at hand, not on assessing how the new regulation will interact with existing regulations (including whether the regulation will overlay or be inconsistent with existing regulations). As Gary Banks pointed out:

> There is also more scope to 'get away with' regulatory overlaps and inconsistencies because many of the costs of regulation are diffuse and 'off-budget' — they are incurred by a multitude of businesses and individuals across the economy. Accordingly, the compliance costs are effectively 'hidden' to those promulgating regulations, and are thus less likely to be taken into account, or given due weight, in government decisions about whether a regulation should be introduced. (2006, p. 13)

There are a number of ways to achieve more nationally consistent regulations, including through mutual recognition agreements or creating national regulation through cooperative arrangements. In the area of animal welfare standards, for example, a nationally consistent approach was agreed some years ago and the Commission is seeking to strengthen this by

proposing an independent body to develop national animal welfare standards and guidelines (chapter 5).

However, while more nationally consistent regulations can have clear benefits (by reducing the regulatory burdens from multiple regulatory regimes), there can also be costs. For example, an agreed national approach can raise the regulatory burden in some jurisdictions and reduce the incentive for jurisdictions to be innovative. Some participants raised concerns in areas where new regulatory and governance structures have been created to address coordination problems, including the Murray-Darling Basin Authority in water (chapter 4).

It can also take time to develop harmonised regulation, and even once agreed, there can be substantial implementation costs. For example, while the introduction of both the Heavy Vehicle National Law and the creation of the National Heavy Vehicle Regulator are important steps to removing unnecessary restrictions and variations in heavy vehicle regulation, the National Heavy Vehicle Regulator is still very much a work in progress. As discussed in chapter 8, a number of states are still transitioning, while Western Australia and the Northern Territory are not participating in the Heavy Vehicle National Law.

The day-to-day experience of farm businesses managing overlapping regulation is more immediately influenced by the activities and communications of regulatory agencies. And, where there are multiple regulators, the Commission heard that they fail to coordinate among themselves in the operation of the regulatory system. For example, the National Agricultural Statistics Review found that the survey burden on the farming sector was partly caused by a lack of coordination between different organisations collecting information (Australian Bureau of Statistics, sub. 59).

Better data and information sharing among regulators can also reduce reporting and other compliance costs for businesses such as in the management of water resources (chapter 4). Better form design (including electronic record keeping) can also reduce the burden of filling out multiple forms for similar activities.

Risk-based approaches to regulation

Disproportionate and overly prescriptive regulation is another recurring theme.

Regulatory responses should be proportionate to risk. That is, regulatory efforts by governments and the burdens these impose on those regulated should be in line with the probability of, and the potential damage that would be caused by, the risk being managed. Regulation that seeks to avoid all risk is not only futile, it can stifle innovation, and unnecessarily deny businesses access to technologies that are essential to maintain international competitiveness.

Governments may be overly risk averse as a result of public pressure or unrealistic expectations about the capacity of regulation to reduce risk or a more general overreaction to low-probability/high-cost events (Herring 1996).

Regulators may also be overly risk averse because they are held to account for only a subset of outcomes, which can lead to them being heavy handed, legalistic or prescriptive in their approach (PC 2013c; Regulation Taskforce 2006). For example, in the context of environmental regulation, the Australian Sugar Milling Council said:

> The particular element of concern is the fact that such regulation is often introduced with a very narrow perspective, mostly in pursuit of improved environmental performance or to address clear market failure, without a holistic consideration of the practical implications. This is particularly the case given the variable nature of agriculture including but not limited to variable soils and growing conditions, climate variability [and] international commodity price fluctuations. (sub. 68, p. 2)

The Commission found a number of examples of disproportionate responses to risk in this inquiry. For example, agvet chemicals that have been assessed and approved by well-regarded overseas regulators are unlikely to pose the same risks as those that have not. The Australian Pesticides and Veterinary Medicines Authority could respond to these different risks by making greater use of international evidence in its assessments (chapter 6). Similarly, some native vegetation and biodiversity conservation regulations do not appear proportionate to the environmental risk posed (chapter 3).

However, prescriptive guidance is not always a bad thing. Small farm businesses, for example, can prefer prescriptive rules (often due to limited capacity to develop their own compliance methods). The need for guidance can be addressed by ensuring that principles-based regulations are accompanied by rules that are detailed but voluntary — this allows some firms to adhere to the prescriptive rules and to be assured of compliance, while allowing other firms to innovate in response to their own unique circumstances (Waite et al. 1998).

Use of science by regulators and in regulatory processes

Scientific evidence is a critical input into many of the policy issues in the agricultural sector. However, in some cases there is a question about whether there may be too narrow a focus on the 'science', for example, in areas such as gene technology, and agvet chemicals. An overly narrow approach risks constraining farm business technology take up, innovation and productivity.

A strength of scientific knowledge as an evidence base for regulation is that it is testable and repeatable. Scientific evidence is used to better inform many regulations affecting agriculture, including those relating to biosecurity, environmental protection and the assessments of the risks posed by new technologies, and agvet chemicals.

In some cases, such as animal welfare regulation, the Commission found that a greater scientific evidence base needs to be built and drawn upon to inform policy. In this case the Commission is suggesting alternative governance mechanisms that would bring a broad range of expert and consumer representatives together to review and understand the latest research in this area and embed this work in the standard setting process.

However, the scientific evidence is at times contested by sections of the community in regulatory areas such as land clearing, animal welfare, gene technology and food labelling. In some cases, broader communication of the latest science is needed to enhance community awareness, and to promote community acceptance of regulatory approaches.

While science plays an important role in informing policy options and their consequences, it should not be the only factor considered. Science should, for example, inform the risks that might be posed by particular land clearing proposals, use of agvet chemicals, or animal husbandry practices, but alone should not determine whether these are in the interests of the Australian community. This requires a balanced assessment of the social and economic trade-offs. For example, some farm herbicides can pose a risk to human health in sufficient quantities, but also provide large benefits in terms of crop volumes by eliminating competing weed vegetation.

The management of issues based on scientific assessments can be appropriate when a technology is new, and little is known about potential risks to the environment or human and animal health that the technology might pose. However, regulatory arrangements need to be reassessed in light of new evidence about risks to ensure that they remain fit for purpose.

The Commission is seeking feedback on whether there is scope to improve the regulatory objectives or institutional arrangements for regulators. In particular, do the current arrangements achieve the right balance when assessing and weighing up the costs and benefits to the community?

Regulatory responses when there are differences in risk perceptions

This inquiry also revealed regulations that have been put place in response to community concerns, including when there is a gap between the risk perceptions of the community and the assessments made by the experts (based on credible scientific, technical and economic evidence). For example, community perceptions of the risks associated with gene technology and foreign investment do not seem well supported by the evidence in these areas. In cases such as these, finding effective policy responses can be challenging. As noted by the OECD, regulations should not be put in place in response to biased perceptions.

> We are faced with a real dilemma: on the one hand, risk regulation, like any other public policy, should be responsive to the preferences of the citizen's; on the other hand, the regulator's task is to issue regulations that are needed to control the 'real' risk levels, as

> indicated by the best available scientific evidence, not to respond to biased perceptions (2010, p. 123)

For example, despite the benefits of foreign investment to the agricultural sector (and the economy), public surveys show that many Australians are concerned about foreign investment, particularly foreign investment in agriculture. Community concerns about foreign investment in agriculture prompted the recent changes to Australia's foreign investment review arrangements (including the lowering of the screening thresholds that trigger review of foreign investment proposals by the Foreign Investment Review Board). However, there is an open question about whether the changes will actually address community concerns about foreign investment in agriculture — regulation should drive a change in outcomes, not just respond to a perceived problem.

Also, while Food Standards Australia New Zealand (and a number of international organisations, such as the World Health Organization and the United States Food and Drug Administration) have concluded that GM foods are no less safe than their non-GM counterparts, surveys indicate that many Australians have concerns about the safety of GM foods. While the moratoria on GM crops in some states and territories are imposed for market access and trade reasons, members of the community may support the moratoria because of concerns about health and safety.

Perceptions of risk may also be reinforced by regulatory solutions. For example, it is possible that labelling of GM foods and lowering the thresholds for foreign investment could reinforce community concerns in these areas.

Public education is an important policy tool that can be used to help inform the community and address misperceptions about the risks and consequences associated with particular activities. In the area of genetic modification, for example, the Commission is recommending that governments and regulatory agencies be more active in communicating and promoting accurate and relevant information.

But, as the OECD said, communicating risk to the community can be challenging:

> Even where risks are able to be measured and quantified and appropriate risk assessment procedures are in place there can remain a deep distrust of formalised risk assessment and the risk management process. (2010, p. 21)

In some cases, growing scientific and economic understanding of the risks and opportunities involved could help to drive change in community perceptions.

Good regulatory processes are not always observed in practice

This inquiry (like many other reviews of regulation) found that regulation that imposes unnecessary costs on businesses can often be traced back to poor regulation-making processes.

It is hard to dispute that good regulation-making processes are essential for good quality regulation and evidence-based policy making. There are principles for good regulation and requirements in place for RIA. Participants to this inquiry strongly supported these regulation-making processes. However, what happens in practice is what matters. And good regulation-making processes are frequently not followed in practice. Some of the regulations that farm businesses were most critical of were not subject to good RIA processes. The Commission found examples of:

- questionable objectives of regulation
- RIA processes that failed to rigorously assess the costs or benefits of regulations
- RIA processes that considered only a limited range of options
- regulations that were put in place despite a finding that the regulation would impose a net cost on the community
- RIA processes that appear to have been disproportionately influenced by particular stakeholders.

RIA processes should be used as an analytical tool to support the quality of regulation making, not as a legitimising tool or compliance exercise. RIA must allow consideration of the potential regulatory burden before it is imposed, as reversing a regulatory mistake can be very costly. However, in some cases, RIAs occurred after the event. An example is the legislation to re-regulate Queensland's sugar industry — the RIA was completed after the legislation had come before Parliament.

If RIA processes are being used as analytical tools, regulations with questionable objectives (or weak rationales for government involvement) should not get past the first hurdle. If this occurred in practice, unnecessary regulations (and the costs they impose on businesses) could be avoided.

More systematic stakeholder engagement (including drawing on a wider evidence base) can also improve the assessment of the costs and benefits of any proposed regulations. Stakeholder engagement is also an important step in determining whether regulation is the most appropriate policy tool (relative to other tools, such as self or co-regulation, or non-regulatory approaches) and if it is, how to design it so that it efficiently achieves its policy objective.

The Tasmania Farmers and Graziers Association said:

> It is in the interests of government to consult early with industry to determine the industry perspective on the perceived problem or concern that needs to be addressed. While there are regular opportunities for consultation, often the problem has been identified and agreed upon without debate and discussion with the key stakeholders who will be impacted by the proposed measures … Industry must be part of the conversation early to ensure there is an open and comprehensive consideration of the issues. (sub. 16, p. 3)

AgForce also argued that:

> Important to effective, balanced regulation is appropriately resourcing stakeholder consultation in developing regulation … (sub. 17, p. 2)

It is notable that a number of participants to this inquiry commented favourably on stakeholder engagement on the *Biosecurity Act 2015* (Cwlth). The reform was conducted with good consultation and was informed by a transparent and high quality RIA.

The problem of best practice RIA principles not being put into practice is not new or easily resolved (Borthwick and Milliner 2012; Dobes, Leung and Argyrous 2016; Harrison 2009; OECD 2009; PC 2011c; Regulation Taskforce 2006). As Harrison said:

> It should be no surprise that efforts to improve the quality of regulation may fail. The whole case for regulatory reform is that bureaucrats and politicians have their own interests and objectives and the political process does not automatically lead to policies in the public interest. The pressures and incentives that lead to bad regulation are still present — such as the influence of special interests and populist pressures to 'do something' about the problem of the day. Politicians respond to these pressures. (2009, p. 43)

Deepening the application of RIA in the policy process is not an easy task. As noted by the Commission and the OECD, its success chiefly depends on the level of commitment expressed by political leaders and their senior officials, coupled with support from stakeholders (OECD 2015b; PC 2012d)

The question is what incentives or arrangements can be put in place to motivate policy makers to use RIA in practice as intended. Or put another way, how can government create a culture with greater commitment to evidence-based policy within government agencies? A related question is what arrangements need to be in place to ensure the regulatory oversight body performs its role and enforces a RIA process that improves regulation?

One way to improve RIA practices is to improve oversight. The reason is that RIA are often of varying quality and could benefit from being subjected to a better quality check. Quality checks should focus on the alternatives put up (are they simply straw men?) and the analysis of costs and benefits.

Those doing the impact assessments also need to be equipped with the mind-set, skills and resources (including time) to produce high quality assessments. As the OECD said:

> … RIA can be time-consuming and normally requires changes in the institutional settings and in the behaviour of civil servants, away from procedure-oriented and towards a more performance-oriented, results-based mind-set. (2015c, p. 39)

The Commission has previously advocated that the Australian Government should commit to building skills in evaluating and reviewing regulation (PC 2011c).

Any changes, however, must carefully weigh up the compliance burden and delays that a more structured or rigid processes might impose (Borthwick and Milliner 2012). Changes need to encourage meaningful compliance (not just ticking the boxes) — there is no point

just adding to the compliance costs of RIA without the benefits of better regulation (Harrison 2009). That said, compliance costs must also be put in the context of the potential economy-wide burden that poor regulation can impose. The compliance costs of regulation making imposed on public authorities are far less important than the compliance costs of regulation imposed on the community. The focus should be on the outcomes (regulation) rather than the inputs (design of regulation).

Requiring regulatory impact statements to be publicly available can also provide an incentive to improve the quality of RIA. The OECD recently stressed the importance of RIA documents being made public, noting that in countries where this was not the case the quality of RIA appeared lower:

> … the transparency effect of RIA is more significant whenever RIA documents are made public: without adequate publicity of RIA documents, most of the added value of the procedure might fade away, as the possibility for stakeholders to access the content of the RIA (possibly when the document is still in progress) provides stimulus to the administrations that draft the document. In some countries (e.g., Italy), the quality of RIA has remained low also since the government has never decided to publish documents online. (2015c, p. 39)

The Australian Government's RIA oversight and governance is ranked about average in the OECD (OECD 2015b). However, the gatekeeper role of the Office of Best Practice Regulation (OBPR) has recently been scaled back. Final regulatory impact statements can now proceed regardless of the OBPR assessment, and RISs do not have to be undertaken if the policy agency considers that alternative processes suffice (OBPR 2015). Within the Department of the Prime Minister and Cabinet, the OBPR is also no longer a separate division headed by a dedicated First Assistant Secretary Executive Director (DPMC 2015).

Stronger oversight should also apply at the state and territory level. Oversight is generally weaker in the states and territories than in the Australian Government (PC 2012d). The ongoing commitment to RIA processes at the state and territory level is also not clear. For example, the independent Victorian Competition and Efficiency Commission was abolished in Victoria and replaced by the Office of the Commissioner for Better Regulation (VCEC 2015). However, the Queensland Government recently improved some aspects of its RIA arrangements through its establishment of the Queensland Productivity Commission, although this body is not fully independent (QPC 2016).

The Commission has previously canvassed leading practices to improve RIA oversight including:

- requiring the oversight body to formally assess all regulation impact statements and to collect and publish agency RISs, compliance information and the reasons for exemptions
- a presumption that a RIS is required, with the oversight body to audit agency decisions not to undertake a RIS
- requiring a post implementation review of non-compliant and exempt proposals, with the terms of reference approved by the oversight body

- periodic auditing of the performance of the oversight body by an independent body (such as the Australian National Audit Office) at the Australian Government level
- situating the oversight body within an independent statutory body, or ensuring that the head of the oversight body be a statutory office holder with direct ministerial reporting and appropriate safeguards to ensure independence and objectivity (PC 2012d).

Another approach is to make departments more accountable for the regulatory outcomes within their remit (and hence the RIA processes that lead to these outcomes). The OECD points to the importance of accountability across the policy cycle and in the context of governments' long term policy goals:

> The accountability effect is also stronger when governments commit to monitor the impacts of the proposed rule and evaluate it over time, within the so-called 'policy cycle'. And it is even stronger if governments use RIA and its underlying methodology to assess the coherence of individual new pieces of legislation with medium-to long-term policy goals … (2015c, p. 39).

Placing RIA in the context of a 'policy cycle' requires a monitoring phase and post implementation evaluation. Ex post monitoring of RIA processes and regulations should be undertaken transparently and by an independent and expert body (such as the Australian National Audit Office) as a way of ensuring that departments remain accountable for the outcomes of the regulations they are responsible for.

In New Zealand, the Government has sought to encourage agency heads to take on a regulatory stewardship role. In 2013, the New Zealand Cabinet agreed to a set of 'Initial Expectations for Regulatory Stewardship' supported by section 32 of the *State Sector Act 1988* (NZ) (which outlines the principal responsibilities of a chief executive of a department or departmental agency). It gives departments more direction about how they should discharge their regulatory stewardship obligations (New Zealand Treasury 2015). The expectation is that departments, in exercising their stewardship role over government regulation, will not propose regulatory change without:

- clearly identifying the policy or operational problem it needs to address, and undertaking impact analysis to provide assurance that the case for the proposed change is robust
- careful implementation planning, including ensuring that implementation needs inform policy, and providing for appropriate review arrangements.

The Australian Government recently introduced the *Public Governance, Performance and Accountability Act 2013* (Cwlth) as part of its broader Public Management Reform Agenda for improving accountability and the performance of government and its agencies (DoF 2016b). The reform agenda is initially focussing on improving resource management within government. There may be scope to incorporate the performance of regulation administered by departments as well as the performance of regulators (as set out in the Australian Government's Regulator Performance Framework (DPMC 2014)). Strengthening accountability for regulation in this way could be one way of getting

departments to treat regulation as a resource that needs to meet its stated objectives in the most cost-effective way.

INFORMATION REQUEST 14.1

The Commission is seeking feedback on possible strategies and governance arrangements for improving the incentives for policy makers to use regulatory impact assessment processes as an analytical tool to support the quality of regulation making, rather than as a legitimising tool or compliance exercise.

Good RIA processes are not sufficient for good regulatory outcomes

Improving the quality of regulation involves more than good RIA processes. No one-off inquiry (such as this) or red-tape reduction target will be able to eliminate or reduce the regulatory burdens that comprise a 'death by a thousand cuts'. As regulatory burdens (associated with all levels of government) change because of interactions with other regulations, it is not sufficient to merely examine the impact of new regulations. The fact that regulation is off-budget and its effects are often dispersed and opaque can bias policy makers towards its use, and systems need to compensate for this.

Policy makers within all government agencies should also take responsibility for actively examining the impact of regulations under their remit to help inform the direction of policy and regulatory reform that could benefit the community. When considering new regulation, policy makers should also properly consider alternatives, including non-regulatory alternatives or taking no action at all. A coherent regulation-making framework by all governments, examined against the stock and flow of regulation in other jurisdictions, is necessary to permanently reduce the regulatory burdens faced by farm businesses.

A Public consultation

In keeping with its standard practice, the Commission has actively encouraged public participation in this inquiry.

- Following receipt of the terms of reference on 20 November 2015, an advertisement was placed in major and rural Australian newspapers in Australia and a circular was sent to identified interested parties.
- An issues paper was released on 22 December 2015 to assist those wishing to make a written submission. A total of 92 submissions were subsequently received prior to the publication of this draft report (table A.1). These submissions are available online at http://www.pc.gov.au/inquiries/current/agriculture/submissions.
- As detailed in table A.2, consultations were held with representatives from the Australian, and state and territory government departments and agencies, academics, peak bodies, and Australian farm businesses.

The Commission thanks all parties who have contributed to this inquiry and now seeks additional input for its final report. The Commission welcomes further submissions to discuss the substance of the draft report, including responses to the information requests and the draft recommendations and findings.

Table A.1 **Submissions**[a]

Participant	*Submission number*
Acton, Larry	55
Aerial Application Association of Australia	12
AgForce	17
Animal Medicines Australia	52
Animals Australia	53 #
AusBiotech	20
Australian Dairy Farmers	63
Australian Bureau of Statistics (ABS)	59
Australian Centre for Agriculture and Law	2*#
Australian Chicken Growers' Council	51
Australian Chicken Meat Federation	40
Australian Food and Grocery Council (AFGC)	28 #
Australian Food Sovereignty Alliance	27
Australian Forest Products Association	11
Australian Honey Bee Industry Council (AHBIC)	34
Australian Industrial Hemp Alliance	69
Australian Livestock and Rural Transporters Association (ALRTA)	47
Australian Livestock Exporters' Council (ALEC)	78
Australian Meat Industry Council (AMIC)	77
Australian Pesticides and Veterinary Medicines Authority (APVMA)	21 #
Australian Pork Limited	37
Australian Property Institute	66
Australian Sugar Milling Council	68
Australian Veterinary Association	26
Baines, Karen	13
Burdekin Shire Council	35
Canegrowers	22
Choice	33
Community and Public Sector Union (CPSU)	6
Consolidated Pastoral Company	71
Cooke, Dr John	29, 30
Co-operative Bulk Handling (CBH) Group	36
Cordina Farms	64, 65*#
Cotton Australia	23
CropLife Australia	14
Department of Agriculture and Water Resources (DAWR)	50
Department of Foreign Affairs and Trade (DFAT)	56
Department of the Environment	80 #
EDOs of Australia	60

(continued next page)

Table A.1 (continued)

Participant	*Submission number*
Export Council of Australia	74
Farmer from southern NSW (name withheld)	83*#
Food Standards Australia New Zealand (FSANZ)	1
Gene Ethics	82, 84, 86, 89, 90 #
GrainGrowers	73
Growcom	43
Harmer, Ronda and Harmer, Allen	15
Hemsworth, Prof. Paul and Coleman, Prof. Grahame	87
Klein, Herta	38
Law Society of South Australia	44
Lawson, Prof. Charles	81 #
Limestone Association of Australia	48
LiveCorp	75 #
Madge Australia Inc.	91, 92
National Farmers' Federation (NFF)	61
National Irrigators' Council	18
Northern Territory Department of Primary Industry and Fisheries (NTDPIF)	67
NSW Egg Farmers Association	7
NSW Farmers' Association (NSWFA)	72
NSW Irrigators' Council	3
NT Farmers	8
Office of NSW Small Business Commissioner (OSBC)	4
Office of the Gene Technology Regulator (OGTR)	76
Pastoralists and Graziers Association of Western Australia (PGA)	70
Primary Producers SA	41
Property Rights Australia	45
Queensland Department of Agriculture and Fisheries	58
Queensland Farmers' Federation (QFF)	32
Rea, Andrew	9
RSPCA Australia	31
Safe Work Australia	10
Sheepmeat Council of Australia and Cattle Council of Australia	88
South Australian Government	57
Targett, Stephen	5
Tasmanian Department of Primary Industries, Parks, Water and Environment (TDPIPWE)	62 #
Tasmanian Farmers and Graziers Association (TFGA)	16
Tropical Pines Pty Ltd	39
Vegan Australia	25
Veterinary Manufacturers and Distributors Association	79 #

(continued next page)

Table A.1 (continued)

Participant	*Submission number*
Voice of Horticulture	42
Walpole, Alison	46
West Wimmera Shire Council	49
Western Australian Government	54
West Australian Pork Producers Association	24
Wimmera Development Association	19
WWF Australia	85 #

a An asterisk (*) indicates that the submission contains confidential material NOT available to the public. A hash (#) indicates that the submission includes attachments.

Table A.2 **Visits**

Participant
New South Wales
Accord Group
Australian Chicken Meat Federation (ACMF)
Australian Farm Institute
Australian Lot Feeders' Association (ALFA)
Choice Australia
Dubbo City Council
Environmental Defenders Office NSW (NSW EDO)
Fletcher, Roger
Gaeta, Guy
LiveCorp
McClymont, Daniel
Meat and Livestock Australia (MLA)
Munro, Scott
Murray Irrigation
NSW Department of Planning & Environment
NSW Department of Primary Industries - Western Lands Office
NSW Department of Primary Industries
NSW Farmers Association
NSW Irrigators' Council
NSW Local Land Services, Central West
NSW Roads and Maritime Services
Pasqual, Trish
Reynolds, Bruce
West, Peter
Victoria
Animal Welfare Science Centre - University of Melbourne
Animals Australia
Australian Dairy Farmers
Citrus Australia
Cooke, Dr John
Dairy Australia
Gene Ethics
Graeme, Philip
Harmer, Ronda and Harmer, Allan
Lambert, Annette
Mansell, Anne
Mildura Development Corporation
Mildura Fruit Company (MFC)
Mildura Rural City Council
Millar, Dr. Hugh

(continued next page)

Table A.2 (continued)

Participant
***Victoria* (continued)**
Natural Resource Management South
Safe Work Australia
Victorian Department of Environment, Land, Water and Planning (DELWP)
Victorian Department of Economic Development, Jobs, Transport and Resources (DEDJTR)
Victorian Department of Treasury and Finance (DTF)
Victorian Farmers Federation (VFF)
Victorian Red Tape Commissioner
Queensland
Acton, Jenny
Acton, Tory
AgForce Queensland
Atkins, Larry
Australian Cane Farmers Association (ACFA)
Australian Chicken Growers Council (ACGC)
Brosnan, Richard
Cotton Australia
Dunn, Matthew
Findlay, Melanie
Fitzroy Basin Association
Growcom
Kelly, Glen
Kime, Emma
Longworth, Prof. John
National Heavy Vehicle Regulator (NHVR)
Nicholas, Ian
Palmer, Rick
Queensland Department of Agriculture and Fisheries
Queensland Department of Environment and Heritage Protection (EHP)
Queensland Department of Natural Resources and Mines (DNRM)
Queensland Department of the Premier and Cabinet
Queensland Farmers Federation (QFF)
Smith, Ellen
Sunderland, Lee
Tropical Pines Pty Ltd
South Australia
Agricultural Bureau of South Australia
Food South Australia
Primary Producers SA (PPSA)
South Australian Department of Environment, Water and Natural Resources

(continued next page)

Table A.2 (continued)

Participant
Western Australia
Pastoral Graziers Association of Western Australia (PGA)
Wellard
Western Australian Department of Agriculture and Food
Western Australian Department of Lands
Western Australian Farmers Federation
Tasmania
Fruit Growers Tasmania Inc. (FGT)
Primary Employers Tasmania (PET)
Tasmanian Department of Primary Industries, Parks, Water and Environment (DPIPWE)
Tasmanian Department of State Growth (DSG)
Tasmanian Farmers & Graziers Association (TFGA)
Tasmanian Institute of Agriculture (TIA)
ACT
Animal Health Australia
Animal Medicines Australia
Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)
Australian Competition and Consumer Commission (ACCC)
Australian Livestock Exporters' Council (ALEC)
Australian Pesticides and Veterinary Medicines Authority (APVMA)
Byron, Neil
Craik, Wendy
CropLife Australia
CSIRO
Department of Agriculture and Water Resources (DAWR)
Department of Industry, Innovation and Science (DIIS)
Department of the Environment
Kompas, Prof. Tom
McNamara, Jason
Murray-Darling Basin Authority (MBDA)
National Farmers' Federation (NFF)
New Zealand High Commission
Office of Best Practice Regulation (OBPR)
Office of the Gene Technology Regulator (OGTR)
Treasury

References

AAAL (Australian Alpaca Association Limited) 2014, *Submission by: Australian Alpaca Association Ltd to the Agricultural Competitiveness Green Paper*, 12 December.

AACo (Australian Agricultural Company) 2016, *About Us — Our History*, Brisbane, http://www.aaco.com.au/about-us/our-history/ (accessed 18 April 2016).

AAWS (Australian Animal Welfare Strategy) 2009, *Australian Animal Welfare Strategy. Development of Australian Standards and Guidelines for the Welfare of Livestock. Business Plan*, http://www.animalwelfarestandards.net.au/files/2011/01/Animal-Welfare-Standards-and-Guidelines-Development-Business-Plan.pdf (accessed 6 July 2016).

—— 2016, *Stock Handlers Lent a Pro Hand*, http://www.australiananimalwelfare.com.au/content/livestock-and-production-animals/stock-handlers-lent-a-pro-hand (accessed 23 March 2016).

AAWSG (Australian Animal Welfare Standards and Guidelines) 2016, *Poultry*, Australian Animal Welfare Standards and Guidelines, http://www.animalwelfarestandards.net.au/poultry/ (accessed 19 April 2016).

ABARES (Australian Bureau of Agricultural and Resource Economics and Sciences) 2015a, *Agricultural Commodity Statistics 2015*, December, Canberra.

—— 2015b, *Catchment Scale Land Use Summary — Australia*, September, Canberra.

—— 2015c, *Diversity in Australia's agricultural workforce*, February, Canberra.

—— 2016a, *Agricultural commodities:* March quarter 2016, Canberra.

—— 2016b, *AGSURF Data*, http://apps.daff.gov.au/AGSURF/ (accessed 21 June 2016).

ABC (Australian Broadcasting Corporation) 2015a, 'Famous Wagyu producer may have to quit farming after neighbours' complaints', *ABC News*, 3 August, http://www.abc.net.au/news/2015-08-03/wagyu-beef-producer-david-blackmore-may-have-to-quit-farming/6669276 (accessed 4 April 2016).

—— 2013, *Vote Compass explorer: What Australians think about the big political issues*, 11 November, http://www.abc.net.au/news/2013-11-11/vote-compass-full-data-explorer/5016244 (accessed 10 May 2016).

—— 2015b, *Fighting Fruit Flies from the Backyard*, http://www.abc.net.au/local/photos/2015/09/15/4312879.htm (accessed 9 November 2015).

—— 2015c, 'Victorian Wagyu farmer David Blackmore abandons fight with Murrindindi Shire Council, plans move', 9 November, http://www.abc.net.au/news/2015-11-09/victorian-wagyu-beef-farmer-abandons-fight-with-council/6924936 (accessed 4 April 2016).

—— 2016, 'Manilla broiler chicken farm gets go-ahead despite local opposition', *ABC Rural*, 1 April, http://www.abc.net.au/news/2016-04-01/70-shed-chicken-farm-gets-go-ahead/7291524 (accessed 4 April 2016).

ABCA (Agricultural Biotechnology Council of Australia) 2015, *The Official Australian Reference Guide to Agricultural Biotechnology and GM crops*, Melbourne.

ABS (Australian Bureau of Statistics) 1998, *Balance of Payments and International Investment Position, Australia: Concepts, Sources and Methods*, 22 September, Cat no. 5331.0, Canberra.

—— 2004, *Detailed Energy Statistics, Australia, 2001-02*, 24 March, Cat. no. 4648.0.55.001, Canberra.

—— 2008, *Natural resource management on Australian Farms*, 25 June, Cat. no. 4620.0, Canberra.

—— 2011, *Agricultural Land and Water Ownership, December 2010*, 9 September, Cat. no. 7127.0, Canberra.

—— 2012, *Australian Social Trends, Dec 2012*, 11 December, Cat. no. 4102.0, Canberra.

—— 2014a, *Agricultural Commodities, Australia, 2012-13*, 30 May, Cat. no. 7121.0, Canberra.

—— 2014b, *Agricultural Land and Water Ownership, June 2013*, 19 June, Cat. no. 7127.0, Canberra.

—— 2015a, *Australian National Accounts input-output tables, 2012-13: table 2*, Canberra.

—— 2015b, *Australian National Accounts: National Income, Expenditure and Product, Sep 2015*, 12 December, Cat. no. 5206.0, Canberra.

—— 2015c, *Australian System of National Accounts, 2014-15*, 30 October, Cat. no. 5204.0, Australian Government, Canberra.

—— 2015d, *Gross Value of Irrigated Agricultural Production, 2013-14*, 7 October, Cat. no. 4610.0.55.008, Canberra.

—— 2015e, *Labour Force, Australia, Detailed, Quarterly, Aug 2015*, 17 September, Cat. no. 6291.0.55.003, Canberra.

—— 2015f, *Road freight movements, Australia, 12 months ended 31 October 2014*, October, Cat. no. 9223.0, Canberra.

—— 2015g, *Survey of motor vehicle use, Australia, 12 months ended 31 October 2014*, October, Cat. no. 9208.0, Canberra.

—— 2015h, *Value of Agricultural Commodities Produced, Australia, 2013-14*, 29 May, Cat. no. 7503.0, Canberra.

—— 2015i, *Water Account, Australia, 2013-14*, Cat. no. 4610.0, Canberra.

—— 2015j, *Water Use on Australian Farms, 2013-14*, Cat. no. 4618.0, Canberra.

—— 2016a, *Agricultural Commodities, Australia, 2014-15*, 23 March, Cat. no. 7121.0, Canberra.

—— 2016b, *Australian National Accounts: Finance and Wealth, Dec 2015*, 24 March, Cat. no. 5232.0, Canberra.

—— 2016c, *Balance of Payments and International Investment Position, Australia, March 2016*, 31 May, Cat. no. 5302.0, Canberra.

—— 2016d, *Counts of Australian Businesses, including Entries and Exits, Jun 2011 to Jun 2015*, Cat. no. 8165.0, February, Canberra.

—— 2016e, *International Investment Position, Australia: Supplementary Statistics, 2015*, 11 May, Cat. no. 5232.0, Australian Government, Canberra.

—— 2016f, *Land Management and Farming in Australia 2014-15*, Cat. no. 4627.0, 25 May, Canberra.

—— 2016g, *Value of Agricultural Commodities Produced, Australia, 2014-15*, 23 March, Cat. no. 7503.0, Canberra.

—— 2016h, *Water Use on Australian Farms, 2014-15*, 27 April, Cat. no. 4618.0, Canberra.

ACCC (Australian Competition and Consumer Commission) 2008, *Report of the ACCC inquiry into the competitiveness of retail prices for standard groceries*, Canberra.

—— 2010, *Water Market Intermediaries — Industry Developments and Practices*, Australian Competition and Consumer Commission, Canberra.

—— 2011, *Guide to collective bargaining notifications*, Canberra.

—— 2013a, *Container stevedoring monitoring report no. 15*, 7 November.

—— 2013b, *Monitoring of the Australian petroleum industry, report of the ACCC into the prices, costs and profits of unleaded petrol in Australia*, December.

—— 2014a, *ACCC Acts on 'Victoria Honey' Misrepresentations*, https://www.accc.gov.au/media-release/accc-acts-on-victoria-honey-misrepresentations (accessed 6 April 2016).

—— 2014b, *Australian Competition & Consumer Commission submission to the Competition Policy Review*, 25 June, Canberra.

—— 2014c, *Country of Origin Claims and the Australian Consumer Law*.

—— 2014d, *Court finds Coles engaged in unconscionable conduct and orders Coles pay $10 million penalties*, 22 December, Media release MR 320/14.

—— 2014e, *Determination Application for revocation and substitution of authorisation A91105 lodged by AgStewardship Australia Limited in respect of arrangements to impose a levy on the sale of agricultural and veterinary chemicals*, January, Authorisation number: A91382.

—— 2014f, *Guidelines on the ACCC's process for making and revoking exemption determinations*, October, Compliance with the Port Terminal Access (Bulk Wheat) Code of Conduct: information for industry participants.

—— 2015a, *2015 Review of Horticulture Code of Conduct ACCC submission*, 16 September.

—— 2015b, *ACCC final position GrainCorp Operations Limited and Quattro Ports at Port Kembla*, 1 October.

—— 2015c, *Complaints & disputes*, https://www.accc.gov.au/business/industry-codes/food-and-grocery-code-of-conduct/complaints-disputes (accessed 1 March 2016).

—— 2015d, *Final determination: WA Chip & Pulp Co Pty Ltd at the Port of Bunbury. Exemption assessment of a bulk wheat port terminal facility under the Port Terminal Access (Bulk Wheat) Code of Conduct*, 24 September.

—— 2015e, *Food and Grocery Code of Conduct*, Australian Competition and Consumer Commission, https://www.accc.gov.au/business/industry-codes/food-and-grocery-code-of-conduct (accessed 1 March 2016).

—— 2015f, *Review of Water Charge Rules - Draft Advice*, November, Canberra.

—— 2015g, *Supermarkets take steps to address ACCC concerns over implementation of the Food and Grocery Code*, 8 December, Media release MR 248/15.

—— 2016a, *ACCC launches market study into cattle and beef industry*, 5 April, Media release MR 41/16.

—— 2016b, *Collective bargaining notifications register*, Australian Competition and Consumer Commission, http://registers.accc.gov.au/content/index.phtml/itemId/773840 (accessed 31 March 2016).

—— 2016c, *Free Range Egg Farms ordered to pay $300 000 penalty for false or misleading 'free range egg' claims*, 15 April, Media release MR 49/16.

—— 2016d, *Review of the Water Charge Rules: Advice Development*, https://www.accc.gov.au/regulated-infrastructure/water/water-projects/review-of-the-water-charge-rules-advice-development (accessed 16 March 2016).

Access Economics 2010, *Regulatory Impact Statement: Proposed Revisions to the National OHS Framework for the Control of Workplace Hazardous Substances and Dangerous Goods*.

ACIL Allen Consulting 2014, *Australia's Comparative Advantage in Agriculture - Final Draft*, Report to Australian Council of Learned Academies, 20 June.

—— 2015, *Implementation of Pre-Application Assistance: Report for Australian Pesticides and Veterinary Medicines Authority*, January, Canberra.

ACT Health 2013, *The Future of the Gene Technology (GM Crop Moratorium) Act 2004 - Policy Discussion Paper for Public Consultation*, Canberra.

AECL (Australian Egg Corporation Limited) 2005, *Unifying for Results: Annual Report 2005*, North Sydney.

—— 2014, *Australian Egg Industry Overview — December 2014*, North Sydney.

Aerial Agricultural Association of Australia Ltd 2014, *Submission to the Agriculture Green Paper December 2014*.

AFGC (Australian Food and Grocery Council) 2014, *AFGC Submission to the Agricultural Competitiveness Green Paper*, 12 December, Barton ACT.

—— 2015, *International Trade Report — Non-Tariff Barriers Facing Australia's Agri-food Exports*, Barton ACT.

AFMA (Australian Financial Markets Association) 2015, *Submission to Treasury's Consultation Paper Implementing Foreign Investment Reforms*, 17 July, Sydney.

Ag-Challenge Consulting 2014, *Intensive Agriculture Study*, October.

AgForce 2015, *State Election Agriculture Policy Outline 2015 'Back in the Black'*.

Agribusiness Yarra Valley 2015, *Submission to House of Representatives Standing Committee on Agriculture and Industry Inquiry into Agricultural Innovation*, Castella, Vic.

Agriculture Victoria 2015, *Waste management*, http://agriculture.vic.gov.au/agriculture/farm-management/legal-information-for-victorian-landholders/waste-management (accessed 12 July 2016).

—— 2016a, *Invasive Plants and Animals Policy Framework*, http://agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds/protecting-victoria-from-pest-animals-and-weeds/invasive-plants-and-animals/invasive-plants-and-animals-policy-framework (accessed 26 June 2016).

—— 2016b, *Prevention of Cruelty to Animals Legislation*, Agriculture Victoria, http://agriculture.vic.gov.au/agriculture/animal-health-and-welfare/animal-welfare/animal-welfare-legislation/victorian-codes-of-practice-for-animal-welfare/prevention-of-cruelty-to-animals-legislation (accessed 24 February 2016).

AIC (Australian Institute of Criminology) 2010, *Illegal native vegetation clearing*, http://www.aic.gov.au/publications/current%20series/rpp/100-120/rpp109/09.html (accessed 21 September 2015).

AIP (Australian Institute of Petroleum) 2015, *Submission to the Department of Energy and Water Supply on the Towards a clean energy economy: achieving a biofuel mandate for Queensland*, 3 July.

Akobeng, A.K. and Thomas, A.G. 2006, *Tolerable Amount of Gluten for People with Ceoliac Disease: A Systematic Review Conducted on Behalf of the Food Standards Agency*, https://www.food.gov.uk/sites/default/files/research-report-tolerable-gluten-levels-coeliac-disease.pdf (accessed 11 April 2016).

Albanese, A. 2012, *Coastal Trading (Revitalising Australian Shipping) Bill 2012, Explanatory Memorandum*.

—— 2016, *Official Hansard No. 1, 2016 Forty-forth parliament first session-eight period*, 4 February, Parliamentary Debates House of Representatives Official Hansard, p. 648.

ALEC (Australian Livestock Exporters' Council) 2014, *Submission to the Agricultural Competitiveness White Paper*, 21 April, Sydney.

ALFA (Australian Lot Feeders' Association) 2014, *Submission in Response to the Agricultural Competitiveness Green Paper*, December, Sydney.

—— 2015a, *Submission to Treasury's Exposure Draft — Implementing Foreign Investment Reforms*, 10 July, Sydney.

—— 2015b, *Submission to Treasury's Options Paper —- Australia's Foreign Investment Framework: Modernisation Options*, May, Sydney.

ALGA (Australian Local Government Association) 2016, *First and last mile issues topic of roads congress discussion*, http://alga.asn.au/?ID=11812 (accessed 2 March 2016).

Allen Consulting Group 2007, *Improving market confidence in water intermediaries*, July, Waterlines Occasional Paper No. 3, Waterlines, National Water Commission, Canberra.

—— 2011, *Review of the Gene Technology Act 2000*, Undertaken for the Australian Department of Health and Ageing, Canberra.

ALRC (Australian Law Reform Commission) 2015, *Traditional Rights and Freedoms — Encroachments by Commonwealth Laws*, Interim Report, July, 127, Australian Law Reform Commission, Sydney.

AMCL (Australian Made Campaign Limited) 2012, *2012 Consumer Survey — Attitudes Towards the AMAG Logo, Buying Australian*, South Melbourne, Victoria.

—— 2013, *2013 Consumer Survey — Attitudes towards buying Australian*, South Melbourne, Victoria.

—— 2016, *About the Logo*, http://australianmade.com.au/why-buy-australian-made/about-the-logo/ (accessed 3 February 2016).

AMEC (Association of Mining and Exploration Companies) 2013, *Submission to Mineral and Energy Resource Exploration*.

ANAO (Australian National Audit Office) 2010, *Management of AusLink Roads to Recovery Program*, Report No. 31, 2009-10.

—— 2015, *The Ethanol Production Grants Program*, Report No. 18, 2014-15.

—— 2016, *Design and Implementation of the First Funding Round of the Bridges Renewal Programme*, Report No. 17, 2015–16.

Anderson, K. 2014, 'The Intersection of Trade Policy, Price Volatility, and Food Security', *Annual Review of Resource Economics*, vol. 6, no. 1, pp. 513–532.

Animal Health Australia 2014, *Australian Animal Welfare Standards and Guidelines for Sheep. Public Consultation Response Action Plan. May*.

Animal Industries Advisory Committee 2015, *Discussion Paper*, 21 December.

Animal Welfare Science Centre 2016, *Program 1 — Animal Welfare Methodology*, http://www.animalwelfare.net.au/article/program-1-animal-welfare-methodology (accessed 15 April 2016).

Annison, G. and Fleming, F. 2015, *Food Safety Auditing Project Report*, September, http://www.fial.com.au/system/files/knowledge_repository/1510_Food%20Safety%20Auditing%20Report.pdf (accessed 23 February 2016).

Ansell, C. and Gash, A. 2008, 'Collaborative Governance in Theory and Practice', *Journal of Public Administration Research and Theory*, vol. 18, no. 4, pp. 543–571.

Ansell, E. and McGinn, E. 2009, *GM Stockfeed in Australia: Economic Issues for Producers and Consumers*, Prepared for the Australian Government Department of Agriculture, Fisheries and Forestry, Canberra.

ANZFRMC (Australia and New Zealand Food Regulation Ministerial Council Food Regulation Standing Committee) 2007, *Australian Standard for the Hygienic Production and Transportation of Meat and Meat Products for Human Consumption (AS 4696: 2007)*, Food Regulation Standing Committee Technical Report No. 3, CSIRO Publishing, Collingwood Vic.

APL (Australian Pork Limited) 2009, *Buying Australian*, http://www.pork.com.au/home-page-consumer/buying-australian/buying-australian.aspx (accessed 28 February 2016).

—— 2015, *Response to Towards a Clean Energy Economy: Achieving a Biofuel Mandate for Queensland*, 26 June, Kingston ACT.

APVMA (Australian Pesticides and Veterinary Medicines Authority) 2014a, *Background to the reforms and the section 6A guidelines*, http://apvma.gov.au/node/961 (accessed 23 September 2015).

—— 2014b, *Occupational health and safety (Part 6)*, http://apvma.gov.au/node/1027 (accessed 7 July 2016).

—— 2015a, *APVMA's Approach to the Use of International Data, Assessments, Standards and Decisions*, April.

—— 2015b, *Nanotechnologies for Pesticides and Veterinary Medicines: Regulatory Considerations, Final Report*, Kingston, ACT.

—— 2016a, *Timeframe Performance*, http://apvma.gov.au/node/19786 (accessed 8 April 2016).

—— 2016b, *Which products/chemicals require registration*, http://apvma.gov.au/node/84 (accessed 8 February 2016).

Arid Recovery 2015, *Arid Recovery Reserve, Where are we*, http://www.arid recovery.org.au/arid-recovery-reserve (accessed 1 October 2015).

Armstrong, I., Adams, K. and Reeves, T. 2007, *Gene Technology (GM Crop Moratorium) Act Review: Independent Panel Report to the NSW Minister for Primary Industries*.

ASBFEO (Australian Small Business and Family Enterprise Ombudsman) 2016, *Roundtable first stop on road to payments order inquiry*, http://www.asbfeo.gov.au/media-release-ASBFEO-roundtable (accessed 30 May 2016).

ASF (Australian Seed Federation) 2011, *Submission to 2011 Review of Gene Technology Act 2000*.

Ashton, D. 2015, *Water trading and water charge rules - a survey of irrigators in the Murray-Darling Basin*, Report to client prepared for the Australian Competition and Consumer Commission, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

——, Cuevas-Cubria, C., Leith, R. and Jackson, T. 2014, *Productivity in the Australian dairy industry - pursuing new sources of growth*, Research Report 14.11, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

ASMC (Australian Sugar Milling Council) 2014, *ASMC Submission to Agricultural Competitiveness Green Paper*.

ASWGA (Australian Superfine Wool Growers' Association) 2015, *Agricultural Competitiveness Green Paper Submission*, 12 January.

Atkin, T., Caputo, M., Robinson, T. and Wang, H. 2014, *Macroeconomic Consequences of Terms of Trade Episodes, Past and Present*, Research Discussion Paper, January, RDP 2014-01, Reserve Bank of Australia.

ATO (Australian Taxation Office) 2015a, *Agricultural land register FAQs now available*, https://www.ato.gov.au/Business/Large-business/In-detail/Business-bulletins/Articles/Agricultural-land-register-FAQs-now-available/ (accessed 14 June 2016).

—— 2015b, *Agricultural land registration form and instructions - agent for an individual or a partnership*, https://www.ato.gov.au/Forms/Agricultural-land-registration-form-and-instructions---agent-for-an-individual-or-a-partnership/ (accessed 10 May 2016).

—— 2015c, *Individual income tax for prior years*, https://www.ato.gov.au/Rates/Individual-income-tax-for-prior-years/?page=1#1991_92 (accessed 15 June 2016).

—— 2015d, *Individual income tax rates*, https://www.ato.gov.au/rates/individual-income-tax-rates/ (accessed 15 June 2016).

—— 2015e, *Tax on contributions*, https://www.ato.gov.au/Individuals/Super/Super-and-tax/Tax-on-contributions/ (accessed 9 June 2016).

—— 2015f, *Temporary residents leaving Australia*, https://www.ato.gov.au/individuals/super/accessing-your-super/temporary-residents-leaving-australia/ (accessed 5 July 2016).

—— 2015g, *Working out if you have to pay super*, https://www.ato.gov.au/business/super-for-employers/working-out-if-you-have-to-pay-super/ (accessed 5 July 2016).

—— 2016a, *Departing Australia superannuation payment (DASP)*, https://www.ato.gov.au/rates/key-superannuation-rates-and-thresholds/?page=12#Departing_Australia_superannuation_payment__DASP_ (accessed 9 June 2016).

—— 2016b, *Excise rates for fuel*, https://www.ato.gov.au/business/excise-and-excise-equivalent-goods/fuel-excise/excise-rates-for-fuel/ (accessed 16 May 2016).

—— 2016c, *Excise Tariff Act 1921*, https://www.ato.gov.au/law/view/document?Mode=type&TOC=%2204%3APLR%3AExcise%20(Including%20Customs,%20Working%20Pages%20and%20By-laws)%3AEXCISE%20TARIFF%20ACT%201921%3A%23000027%23SECTION%206H%20Rate%20of%20duty%20payable%20on%20denatured%20ethanol%3B%22 (accessed 11 July 2016).

—— 2016d, *Land registers*, 8 June, Foreign Investment Reforms: Australia's foreign investment framework, Australian Government.

—— 2016e, *Small Business Superannuation Clearing House*, https://www.ato.gov.au/business/super-for-employers/paying-super-contributions/small-business-superannuation-clearing-house/ (accessed 15 June 2016).

—— 2016f, *Work out your tax residency*, https://www.ato.gov.au/Individuals/International-tax-for-individuals/Work-out-your-tax-residency/ (accessed 15 June 2016).

AusBiotech 2014, *Submission to the Agricultural Competitiveness Green Paper*, South Yarra.

Austrade (Australian Trade and Investment Commission) 2015, *Investment opportunities in Australian agribusiness*, October, Australian Government, Sydney.

—— 2016a, *Significant and Premium Investor Visa Programmes*, http://www.austrade.gov.au/international/invest/guide-to-investing/coming-to-australia/significant-and-premium-investor-programmes/austrades-role (accessed 14 June 2016).

—— 2016b, *Tariffs and regulations: Export markets — United States of America*, https://www.austrade.gov.au/Australian/Export/Export-markets/Countries/United-States-of-America/Doing-business/Tariffs-and-regulations (accessed 7 April 2016).

—— nd, *About land tenure*, http://www.austrade.gov.au/land-tenure/Land-tenure/about-land-tenure (accessed 21 March 2016).

Australian Animal Welfare Standards and Guidelines 2016, *Australian Animal Welfare Standards and Guidelines*, http://www.animalwelfarestandards.net.au/ (accessed 6 July 2016).

Australian Dairy Farmers 2015, *Submission to the Productivity Commission Workplace Relations inquiry*, 12 March.

Australian Dairy Industry Council and Dairy Australia 2014a, *Australian Dairy Industry Response to the Review of the Water Act 2007*.

—— and —— 2014b, *Submission to the Agricultural Competitiveness Green Paper*, December, Melbourne.

Australian Farm Institute 2011, 'Adding up the cost of transport', *Farm Institute Insights*, vol. 8, no. 3, p. 6.

Australian Government 2000, *The Government Response to the National Competition Policy Review of the Export Control Act 1982*, Canberra ACT.

—— 2006, *Rethinking regulation: report of the taskforce on reducing regulatory burdens on business - Australian Government's response*, 15 August.

—— 2014a, *Agricultural Competitiveness Green Paper*, Canberra.

—— 2014b, *Industry Innovation and Competitiveness Agenda - An Action Plan for a Stronger Australia*, Canberra.

—— 2014c, *The Australian Government Guide to Regulation*, Canberra, http://cuttingredtape.gov.au/sites/default/files/files/Australian_Government_Guide_to_Regulation.pdf (accessed 6 January 2016).

—— 2015a, *Agricultural Competitiveness White Paper*, Canberra.

—— 2015b, *Australian farming and agriculture — grazing and cropping*, http://www.australia.gov.au/about-australia/australian-story/austn-farming-and-agriculture (accessed 31 May 2016).

—— 2015c, *Foreign Investment Reforms Factsheet: Agriculture*, Canberra.

—— 2015d, *Our North, Our Future: White Paper on Developing Northern Australia*, Canberra.

Australian Organic 2013, *Australian Certified Organic Standard 2013*, Nundah, Queensland, http://austorganic.com/australian-certified-organic-standard2/ (accessed 12 January 2016).

AustRoads 2010, *Road Safety on Local Government Roads: Final Report*, AP-R359-10.

AUSVEG 2015a, *Submission to the Department of Agriculture Agricultural Export Regulation Review*, 18 September, Camberwell Vic.

—— 2015b, *Submission to the review of DEDJTR Regional Service Delivery Model and Strategic Directions for Regional Policy*.

AVA (Australian Veterinary Association) 2014, *Agricultural Competitiveness Green Paper, Submission from the Australian Veterinary Association Ltd*, 12 December, Sydney.

—— 2015, *Criminal Code Amendment (Animal Protection) Bill 2015 Submission from the Australian Veterinary Association*, 12 March.

Azarias, J., Lambert, J., McDonald, P. and Malyon, K. 2014, *Robust New Foundations, A Streamlined, Transparent and Responsive System for the 457 Programme, An Independent Review into Integrity in the Subclass 457 Programme*, September.

Baker, D. and Graber-Lützhøf, K. 2007, 'Concentration in agribusiness and marketing — a case study of Arla Foods', in Pinstrup-Andersen, P. and Chen, F. (eds), *Food Policy for Developing Countries: Case Studies*, Cornell University, Ithaca.

Banks, G. 2006, *Regulation for Australia's Federation in the 21st Century*, Productivity Commission Chairman's Speech, Canberra.

Barbour, L. 2016, 'Foreign-owned land register will not be made public despite transparency pledge', *ABC News*, 30 March, http://www.abc.net.au/news/2016-03-30/register-of-foreign-owned-farm-land-will-not-be-made-public/7284104?section=business (accessed 10 April 2016).

Barnett, J., L. and Hemsworth, P. 2009, 'Welfare monitoring schemes: Using research to safeguard welfare of animals on the farm', *Journal of Applied Animal Welfare Science*, vol. 12, no. 2, pp. 114–131.

Bartel, R. 2014, 'Vernacular knowledge and environmental law: cause and cure for regulatory failure', *Local Environment*, vol. 19, no. 8, pp. 891–914.

Baston, K. (Minister for Agriculture and Food) 2015, *Animal Welfare Act - Independent Review. Statement by Minister for Agriculture and Food*, 2 December, NSW Legislative Council.

BCA (Business Council of Australia) 2010, *Foreign Attraction: Building on our advantages through foreign investment - How can we continue to meet our foreign investment needs?*, April, Melbourne.

—— 2014, *Submission to the Department of Infrastructure and Regional Development on the approaches to regulating coastal shipping in Australia options paper*, June, Melbourne.

—— 2015, *Submission to Treasury's Options Paper - Strengthening Australia Foreign Investment Framework*, March, Melbourne.

Beale, R., Fairbrother, J., Inglis, A. and Trebeck, D. 2008, *One Biosecurity: A Working Partnership, The Independent Review of Australia's Quarantine and Biosecurity Arrangements Report to the Australian Government*, 30 September, Commonwealth of Australia, Canberra.

Belzer, M., Rodriguez, D. and Sedo, S. 2002, *Paying for Safety: An Economic Analysis of the Effect of Compensation on Truck Driver Safety*, Sponsored by Science Applications International Corporation and Federal Highway Transport Safety Administration.

Bernard, H.R. 2011, *Research Methods in Anthropology: Qualitative and Quantitative Approaches*, Rowman Altamira, Plymouth.

Bettles, C. 2016, 'Cash checks calls to scrap costly ag-vet-chem labels', *North Queensland Register*, 2 May.

Beyer, P., Al-Babili, S., Ye, X., Lucca, P., Schaub, P., Welsch, R. and Potrykus, I. 2002, 'Golden Rice: Introducing the β-Carotene Biosynthesis Pathway into Rice Endosperm by Genetic Engineering to Defeat Vitamin A Deficiency', *Journal of Nutrition*, vol. 132, p. 506S–510S.

Binder, M. 2002, *The Role of Risk and Cost-Benefit Analysis in Determining Quarantine Measures*, Productivity Commission Staff Research Paper, Canberra.

Bishop, J. (Minister for Foreign Affairs) and Robb, A. (Minister for Trade and Investment) 2015, *Expansion of the Seasonal Worker Programme*, Joint media release, 25 June.

BITRE (Bureau of Infrastructure, Transport and Regional Economics) 2014, *Freightline I — Australian freight transport overview*, Department of Infrastructure and Regional Development.

—— 2015a, *Australian sea freight 2013-14*, Department of Infrastructure and Regional Development, Canberra.

—— 2015b, *BITRE statistical alert — road freight movement survey 2014*, BITRE statistical alert — road freight movement survey 2014.

—— 2015c, *Trainline 3*, Department of Infrastructure and Regional Development, Canberra.

Blewett, N., Goddard, N., Pettigrew, S., Reynolds, C. and Yeatman, H. 2011, *Labelling Logic: Review of Food Labelling Law and Policy*, Canberra.

Blokhuis, H.J., Jones, R.B., Geers, R., Miele, M. and Veissier, I. 2003, 'Measuring and monitoring animal welfare: transparency in the food product quality chain', *Animal Welfare*, vol. 12, no. 4, pp. 445–455.

BoM (Bureau of Meteorology) 2015, *Water trading restrictions quick reference table*, Water Market Information, http://www.nationalwatermarket.gov.au/rules-restrictions/restrictions-reference.html (accessed 5 July 2016).

Borthwick, D. and Milliner, R. 2012, *Independent Review of the Australian Government's Regulatory Impact Analysis Process*, Canberra.

Bowler, A. and Ackhurst, K. 2015, 'Restrictions in Canada on foreign ownership of land', *Cultivate Food and agribusiness newsletter, Norton Rose Fulbright*, no. 8, pp. 12–15.

Bray, R.J. 2013, *Reflections on the evolution of the minimum wage in Australia: options for the future*, May, Australian National University.

BREE (Bureau of Resources and Energy Economics) 2014, *An assessment of key costs and benefits associated with the Ethanol Production Grants program*, A report for the Department of Industry, February.

Bricknell, S. 2010, *Environmental crime in Australia*, AIC Research and Public Policy Series no. 109, Australian Institute of Criminology, Canberra.

Brooks, R., Glanville, R. and Kompas, T. 2015, *Queensland Biosecurity Capability Review*, Final Report, September.

Bruce, G. and Critchley, C. 2012, *The Swinburne National Technology and Society Monitor: 2012 Monitor*.

—— and —— 2013, *The Swinburne National Technology and Society Monitor: 2013 Monitor*.

Buetre, B., Wicks, S., Kruger, H., Millist, N., Yainshet, A., Garner, G., Duncan, A., Abdalla, A., Trestrail, C., Hatt, M., Thompson, L.-J. and Symes, M. 2013, *Potential socio-economic impacts of an outbreak of foot-and-mouth diesease in Australia*, October, Research report 13.11, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

Bureau Veritas Australia & New Zealand 2016, *Certification Services*, http://www.bureauveritas.com.au/home/about-us/our-business/certification (accessed 27 June 2016).

Butt, P. 2001, *Land Law*, 4th edn, Lawbook Co., Sydney.

Byron, N. 2010, *A different future for the National Water Initiative? Institutional Considerations*, Prepared for the National Water Commission, Centre for Water Economics & Environmental Policy, Australian National University, Canberra.

——, Craik, W., Keniry, J. and Possingham, H. 2014, *A review of biodiversity legislation in NSW - Final Report of the Independent Biodiversity Legislation Review Panel*, 18 December, Sydney.

Canada Revenue Agency 2016, *Non-residents of Canada*, http://www.cra-arc.gc.ca/tx/nnrsdnts/ndvdls/nnrs-eng.html#rsdncstts (accessed 15 June 2016).

Canegrowers 2016, *Permits & approvals*, http://www.canegrowers.com.au/page/Industry_Centre/grower-centre/Permits__approvals/ (accessed 25 February 2016).

Cantor, D., Celebi, H., Corsi, T. and Grimm, C. 2013, 'Do Owner–Operators Pose a Safety Risk on the Nation's Highways?', *Transportation Research Part E Logistics and Transportation Review*, vol. 59, pp. 34–47.

Carter, C.A. and Gruère, G.P. 2003, 'Mandatory labelling of genetically modified foods: does it really provide consumer choice?', *AgBioForum*, vol. 6, no. 1&2, pp. 68–70.

CASA (Civil Aviation Safety Authority) 2016, *Red Tape Cut for Remotely Piloted Aircraft*, https://www.casa.gov.au/publications-and-resources/media-release/red-tape-cut-remotely-piloted-aircraft (accessed 5 April 2016).

Cash, M. (Minister for Employment) and Joyce, B. (Minister for Agriculture) 2016, *Seasonal workers expanding to greener pastures*, Joint media release, 8 February.

Catassi, C., Fabiani, E., Iacono, G., D'Agate, C., Francavilla, R., Biagi, F., Volta, U., Accomando, S., Picarelli, A., De Vitis, I., Pianelli, G., Gesuita, R., Carle, F., Mandolesi, A., Bearzi, I. and Fasano, A. 2007, 'A prospective, double-blind, placebo-controlled trial to establish a safe gluten threshold for patients with celiac disease', *The American Journal of Clinical Nutrition*, vol. 2007, no. 85, pp. 160–166.

CCA (Cattle Council of Australia) 2015, *Submission to the Senate Standing Committee on Economics Inquiry into the provisions of the Foreign Acquisitions and Takeovers Legislation Amendment Bill 2015 and related bills*, 30 March, sub. 2, Kingston ACT.

——, ALFA and SCA (Cattle Council of Australia, Australian Lot Feeder's Association and Sheepmeat Council of Australia) 2015, *Submission to House of Representatives Standing Committee on Agriculture and Industry Inquiry into Agricultural Innovation*.

CEDA (Committee for Economic Development of Australia) 2008, *The contribution of foreign direct investment and the mining industry to the welfare of Australians*, November, Information Paper 92, Melbourne.

Chan, G. 2015, 'Farmers should have right to veto coal seam gas on their land, says Warren Truss', *The Guardian*, 23 October.

Chen, C. and Randall, A. 2013, 'The economic contest between coal seam gas mining and agriculture on prime farmland: it may be closer than we thought', *Journal of Economic and Social Policy*, vol. 15, no. 3.

Cherry Growers Australia 2015, *Australian Cherry Industry Biosecurity Management Programme, Draft - June 2015*, June, Hobart.

—— 2016, *Export and trade*, http://www.cherrygrowers.org.au/export/ (accessed 30 June 2016).

Chester (Minister for Infrastructure and Transport) 2016, *High-tech surveillance network to target fatigue*, 18 April, Media release DC052/2016.

Choice 2012, *Choice Survey on Consumer Expectations Free Range Egg Labelling: Key Findings Report*, https://www.choice.com.au/~/media/3042a3fe97cb4613882f415aa4e56b00.ashx (accessed 10 March 2016).

—— 2014, *Do You Shell Out for Free-Range Eggs?*, https://www.choice.com.au/food-and-drink/meat-fish-and-eggs/eggs/articles/free-range-eggs (accessed 10 February 2016).

—— 2015a, *Do You Know Where Your Food Comes From?*, https://www.choice.com.au/shopping/packaging-labelling-and-advertising/labelling/articles/country-of-origin-labelling (accessed 8 March 2016).

—— 2015b, *Free Range Eggs: Making the Claim Meaningful*, June, https://www.choice.com.au/~/media/619b60e5a1f04b2191d09fd9dab4c72e.ashx (accessed 1 November 2016).

—— 2015c, *Free Range Eggs: The Consumer Perspective. Submission to Consumer Affairs Australia and New Zealand*, Marrickville, New South Wales.

—— 2016a, *CHOICE launches free-range egg app*, http://www.choice.com.au/food-and-drink/meat-fish-and-eggs/eggs/articles/choice-free-range-egg-app (accessed 5 July 2016).

—— 2016b, *It's All About 'Australian-ness'*, http://www.choice.com.au/shopping/packaging-labelling-and-advertising/labelling/articles/new-country-of-origin-labelling-system-announced (accessed 14 April 2016).

—— 2016c, *Still on the Shelf*, https://www.choice.com.au/food-and-drink/meat-fish-and-eggs/eggs/articles/choice-calls-for-bad-egg-boycott-310316 (accessed 12 April 2016).

Clarke, H. 2002, 'Institutional Design for Biodiversity Conservation', *Agenda*, vol. 9, no. 4, pp. 305–320.

COAG (Council of Australian Governments) 2004, *Intergovernmental Agreement on a National Water Initiative*, 25 June.

—— 2008, *Inter-Governmental Agreement for Regulatory and Operational Reform in Occupational Health and Safety*, 3 July, Canberra.

—— 2012a, *Intergovernmental Agreement on Biosecurity*, https://www.coag.gov.au/node/47 (accessed 12 October 2015).

—— 2012b, *National Environmental Biosecurity Response Agreement*, 13 January, Version 1.1, Canberra.

COAG SCEW (COAG Standing Council on Environment and Water) 2012, *Australia's Native Vegetation Framework*, Canberra.

Coase, R.H. 1960, 'The Problem of Social Cost', *Journal of Law and Economics*, vol. 3, pp. 1–44.

Cochrane Australia 2016, *Systematic Review of Safe Level of Gluten for People with Coeliac Disease: Final Report*, 5 February.

Cocklin, C., Dibden, J. and Mautner, N. 2003, *Stewards of the Land: landholder perspectives on sustainable land management*, Department of Sustainability and Environment Victoria, Melbourne.

Coleman, G. 2009, *Tools to Assess Community Attitudes and Consumer Responses to Animal Welfare. Final Report, APL Project 2009/2264*.

Colmar Brunton 2015, *Country of Origin Food Labelling Research*, July, Canberra.

Commonwealth of Australia 2014, *Report of the Independent Review of the Water Act 2007*, November, Canberra.

—— 2015a, *Exporter Supply Chain Assurance System Report*, January, Canberra.

—— 2015b, *National Primary Production Work Diary Exemption (Notice)*, Commonwealth of Australia Gazette, 2015 (No. 2), Heavy Vehicle National Law.

Connell, D. 2007, *Water Politics in the Murray-Darling Basin*, Federation Press.

Cooper, J., Goldberg, A., Rubin, E., Tucker, S. and Jones, R. 2013, *A Super Charter: fewer changes, better outcomes — A report to the Treasurer and Minister Assisting for Financial Services and Superannuation*, 5 July.

Costanigro, M. and Lusk, J.L. 2014, 'The signalling effect of mandatory labels on genetically engineered food', *Food Policy*, vol. 49, no. 2014, pp. 259–267.

Craigie, J. 2014, *Regulation and reform of the Queensland sugar industry*, Submission to the Senate inquiry on current and future arrangements for the marketing of Australian sugar, Australian Sugar Milling Council, Brisbane.

Craik, W., Palmer, D. and Sheldrake, R. 2016, *Is Australia's national biosecurity system and the underpinning Intergovernmental Agreement on Biosecurity fit for the future?*, Discussion Paper, May, IGAB Independent Review Panel, Canberra.

Cripps, A. (Minister for Natural Resources and Mines) 2013, *Vegetation Management Framework Amendment Bill 2013 Explanatory Speech*, Queensland Parliament.

CropLife Australia 2016, *Innovation in Agriculture Stifled by Ineffective Reforms and Inefficiency*, Media Release, 24 February 2016, Canberra.

CSIRO (Commonwealth Scientific and Industrial Research Organisation) 2008, *Water availability in the Murray-Darling Basin: summary of a report to the Australian Government*, CSIRO Murray-Darling Basin Sustainable Yields Project.

—— 2015a, *CYBERNOSE® Biosensor*, http://www.csiro.au/en/Research/FNF/Areas/Bioproducts/Bio-inspired-products/CYBERNOSE-biosensor (accessed 4 March 2016).

—— 2015b, *Livestock Logistics*, http://www.csiro.au/en/Research/LWF/Areas/Landscape-management/Livestock-logistics (accessed 4 March 2016).

—— 2015c, *Locating Cattle with Unmanned Aerial Vehicles*, http://www.csiro.au/en/Research/AF/Areas/Animal-Science/Precision-livestock-management/Locating-cattle (accessed 4 March 2016).

—— 2015d, *Overview of Gene Technology Research at CSIRO*, http://www.csiro.au/en/Research/Farming-food/Innovation-and-technology-for-the-future/Gene-technology/Overview (accessed 14 October 2015).

—— 2015e, *Reducing the gluten content of barley*, http://www.csiro.au/en/Research/AF/Areas/Plant-Science/Wheat-barley/ULG-barley (accessed 6 April 2016).

—— 2016, *Swarm sensing: tiny technology creates a buzz*, http://www.csiro.au/en/Research/BF/Areas/Protecting-Australias-agricultural-industries/Robot-technology/Swarm-sensing (accessed 14 April 2016).

—— and JCU (Commonwealth Scientific and Industrial Research Organisation and James Cook University) 2013, *Land tenure in Northern Australia: Opportunities and challenges for investment*.

Curtis, A., Ross, H., Marshall, G., Baldwin, C., Cavaye, J., Freeman, C., Carr, A. and Syme, G. 2014, 'The great experiment with devolved NRM governance: lessons from community engagement in Australia and New Zealand since the 1980s', *Australasian Journal of Environmental Management*, vol. 21, no. 2, pp. 175–199.

DAFF (Department of Agriculture, Fisheries and Forestry) 2009, *Levy Principles and Guidelines*, Canberra.

—— 2011a, *Better Regulation of Agricultural and Veterinary Chemicals: Regulatory Impact Statement*.

—— 2011b, *Decision–Making Using a Risk Based Framework: Fact Sheet No. 1*.

—— 2012, *National Food Plan green paper 2012*, Canberra.

Dairy Australia 2014, *Precision Dairy Technology — Automatic Milking Systems*, Southbank, Vic.

—— 2016, *Technologies*, http://www.dairyaustralia.com.au/Animal-management/Technologies.aspx (accessed 7 March 2016).

Dammen, S. 2005, 'The effects of safety practices, technology adoption, and firm characteristics on motor carrier safety', *Journal of the Transportation Research Forum*, vol. 44, no. 1, pp. 103–120.

Davidson, B.R. 1981, *European farming in Australia: an economic history of Australian farming*, Elsevier Scientific Pub. Co.

DAWR (Department of Agriculture and Water Resources) 2014, *National Surveillance and Diagnostics Framework*.

—— 2015a, *A review of Australia's preparedness for the threat of foot-and-mouth disease*, http://www.agriculture.gov.au/pests-diseases-weeds/animal/fmd/review-foot-and-mouth-disease (accessed 29 June 2016).

—— 2015b, *A Single National Framework for the Regulation of Agricultural Chemicals and Veterinary Medicines - Regulatory Model*, http://www.agriculture.gov.au/ag-farm-food/ag-vet-chemicals/domestic-policy/history-of-coag-reforms/regulatory-model (accessed 12 April 2016).

—— 2015c, *Approved Arrangements*, http://www.agriculture.gov.au/export/controlled-goods/dairy/dairy-eggs-fish-export-guidelines/approved-arrangements#departmental-audits (accessed 17 March 2016).

—— 2015d, *Biosecurity Import Risk Analysis Process Flowchart*, Canberra.

—— 2015e, *Biotechnology*, http://www.agriculture.gov.au/ag-farm-food/biotechnology (accessed 21 January 2016).

—— 2015f, *Domestic Food Regulatory System*, http://www.agriculture.gov.au/ag-farm-food/food/regulation-safety/regulatory-system (accessed 5 January 2016).

—— 2015g, *Examination of the Import Risk Analysis (IRA) process*, http://www.agriculture.gov.au/biosecurity/risk-analysis/ira/iraexamination (accessed 12 April 2016).

—— 2015h, *Export Advisory Notice — 2015-10 — ESCAS Control and Traceability Standards and Audit Requirements for Vietnam Supply Chains*.

—— 2015i, *Export Goods Controlled by the Department*, http://www.agriculture.gov.au/export/controlled-goods/ (accessed 5 April 2016).

—— 2015j, *Fact sheet — Improvements to Agricultural Export Legislation*, http://www.agriculture.gov.au/biosecurity/legislation/export-regulation-review/improvements-agricultural-export-legislation (accessed 5 April 2016).

—— 2015k, *Food Regulation and Safety*, http://www.agriculture.gov.au/ag-farm-food/food/regulation-safety#the-commonwealth-government (accessed 5 January 2016).

—— 2015l, *Home Authorised Officer Conflict of interest*, http://www.agriculture.gov.au/export/controlled-goods/plants-plant-products/ao/conflict-of-interest (accessed 31 March 2016).

—— 2015m, *Industry Advice Notice No: 2015/45 Market Access for External Authorised Officers for Export Horticulture Protocol Markets*, 1 October, Canberra.

—— 2015n, *Industry Advice Notice No: 2015/46 Authorised Officer Program — Release of New Job Function for Horticulture Protocol Markets*, 2 October, Canberra.

—— 2015o, *Levies Explained*, http://www.agriculture.gov.au/ag-farm-food/levies/publications/levies_explained (accessed 11 April 2016).

—— 2015p, *Live animal export trade*, Australian Government, http://www.agriculture.gov.au/animal/welfare/export-trade (accessed 25 June 2016).

—— 2015q, *Manual of Importing Country Requirements (MICoR)*, Australian Government, Canberra.

—— 2015r, *National Biosecurity Committee – Meeting 19 – Communiqué*, http://www.agriculture.gov.au/biosecurity/partnerships/nbc/nbc-meeting-19 (accessed 12 April 2016).

—— 2015s, *National Water Infrastructure Development Fund — Guidelines, Feasibility Component*, Canberra.

—— 2015t, *Reforms to regulation of agricultural chemicals and veterinary medicines*, http://www.agriculture.gov.au/ag-farm-food/ag-vet-chemicals/better-regulation-of-ag-vet-chemicals (accessed 23 September 2015).

—— 2015u, *Regulation — The National Registration Scheme*, http://www.agriculture.gov.au/ag-farm-food/ag-vet-chemicals/regulation (accessed 7 February 2016).

—— 2015v, *Requirements of an Approved Arrangement*, December, Version no. 2.

—— 2015w, *Rural Research and Development Corporations*, http://www.agriculture.gov.au/ag-farm-food/innovation/research_and_development_corporations_and_companies (accessed 11 April 2016).

—— 2015x, *Using Overseas Decisions as Basis for Registration*, October.

—— 2016a, *Agricultural Trade Matters, April 2016*, http://www.agriculture.gov.au/market-access-trade/agricultural-trade-matters/april-2016 (accessed 6 April 2016).

—— 2016b, *Appropriate Level of Protection*, http://www.agriculture.gov.au/biosecurity/risk-analysis/conducting/appropriate-level-of-protection (accessed 20 June 2016).

—— 2016c, *Approved Auditor Information*, 18 February, Australian Government, Canberra ACT, http://www.agriculture.gov.au/export/from-australia/approved-auditors/approved-auditor-information (accessed 20 March 2016).

—— 2016d, *Australian agricultural and grazing industries survey — All broadacre industries selected physical and financial estimates, by state*, April.

—— 2016e, *Australian dairy industry survey*, April.

—— 2016f, *Biosecurity Act 2015*, http://www.agriculture.gov.au/biosecurity/legislation/new-biosecurity-legislation (accessed 8 July 2016).

—— 2016g, *Biosecurity Import Risk Analysis Guidelines 2016*, June, Canberra.

—— 2016h, *Biosecurity zones*, http://www.agriculture.gov.au/biosecurity/legislation/new-biosecurity-legislation/quick-guide/bio-zones (accessed 30 June 2016).

—— 2016i, *Export*, http://www.agriculture.gov.au/export (accessed 2 June 2016).

—— 2016j, *Exporting Dairy Products*, http://www.agriculture.gov.au/export/controlled-goods/dairy (accessed 17 March 2016).

—— 2016k, *External Authorised Officer Framework*, 15 January, Version 1, Canberra.

—— 2016l, *Importing Food*, 16 June, Australian Government, Canberra ACT, http://agriculture.gov.au/import/goods/food (accessed 27 June 2016).

—— 2016m, *Improving Agricultural Export Legislation*, http://www.agriculture.gov.au/biosecurity/legislation/export-regulation-review?wasRedirectedByModule=true (accessed 31 March 2016).

—— 2016n, *Intergovernmental Agreement on Biosecurity Review*, http://www.agriculture.gov.au/biosecurity/partnerships/nbc/intergovernmental-agreement-on-biosecurity/igabreview (accessed 12 April 2016).

—— 2016o, *Managing Biosecurity Risks Onshore (Onshore Powers)*, http://www.agriculture.gov.au/biosecurity/legislation/new-biosecurity-legislation/quick-guide/onshore-powers (accessed 30 June 2016).

—— 2016p, *Market access achievements*, http://www.agriculture.gov.au/market-access-trade/agricultural-trade-matters/achievements (accessed 6 April 2016).

—— 2016q, *National Biosecurity Committee*, http://www.agriculture.gov.au/biosecurity/partnerships/nbc (accessed 8 July 2016).

—— 2016r, *Reference: Table of Horticulture Protocol Markets*, 10 May, version 4.0, Australian Government, Canberra.

—— 2016s, *Review of Duplication between Agricultural and Veterinary Chemical and Work Health and Safety Legislation*, http://www.agriculture.gov.au/ag-farm-food/ag-vet-chemicals/review-of-duplication (accessed 13 April 2016).

—— 2016t, *Streamlining the Regulation of Agvet Chemicals*, http://www.agriculture.gov.au/ag-farm-food/ag-vet-chemicals/better-regulation-of-ag-vet-chemicals/streamlining (accessed 19 February 2016).

Debelle, G. 2014, 'Capital Flows and the Australian Dollar', presented at Financial Services Institute of Australia, Adelaide, Reserve Bank of Australia, 20 May.

Deloitte 2015, *Country of Origin labelling — does it stack up?*, http://www2.deloitte.com/au/en/pages/consumer-business/articles/country-of-origin-labelling-does-it-stack-up.html (accessed 30 September 2015).

Deloitte Access Economics 2012, *Submission to the Review of Rice Vesting — Australian Food and Agriculture Company Limited*, Australian Food and Agriculture Company Limited.

—— 2013, *Economic Activity Attributable to Crop Protection Products*, Report to CropLife Australia.

Department of Industry and Science 2015, *Domestic Gas Strategy: Australian Government Policy and Actions*.

Department of the Environment 2013, *Prior authorisation and continuing use exemptions — Sections 43A and 43B*, http://www.environment.gov.au/resource/prior-authorisation-and-continuing-use-exemptions-sections-43a-and-43b (accessed 13 April 2016).

—— 2014, *West Wimmera landowner to pay penalty after infringement*, http://www.environment.gov.au/mediarelease/west-wimmera-landowner-to-pay-penalty-after-infringement (accessed 2 March 2016).

—— 2016, *Live import list*, http://www.environment.gov.au/biodiversity/wildlife-trade/live/import-list (accessed 13 April 2016).

DEWHA (Department of the Environment, Water, Heritage and the Arts,) 2010, *Australian farms and farming communities*, 1 July.

DFAT (Department of Foreign Affairs and Trade) 2015a, *Annual Report 2014-2015*, Australian Government, Barton ACT.

—— 2015b, *Korea-Australia Free Trade Agreement — Fact Sheet: Investment*, 7 August, Barton ACT.

—— 2015c, *Trade and Investment Topics — Agriculture*, http://dfat.gov.au/trade/topics/pages/agriculture.aspx (accessed 17 December 2015).

—— 2016a, *China-Australia Free Trade Agreement — Fact Sheet: Investment*, 5 January, Barton ACT.

—— 2016b, *Japan-Australia Economic Partnership Agreement — Fact sheet: Trade in services and investment*, 28 January, Barton ACT.

DFSV (Dairy Food Safety Victoria) 2016, *Audits*, www.dairysafe.vic.gov.au/auditing/audits (accessed 22 March 2016).

—— 2015, *Is raw milk dangerous?*, https://www.dairysafe.vic.gov.au/consumers/keeping-dairy-food-safe/is-raw-milk-dangerous (accessed 6 July 2016).

DIAC (Department of Immigration and Citizenship) 2009, *Do your employees have a valid visa to work in Australia?*, Canberra.

Diaz-Bonilla, E. and Ron, J.F. 2010, *Food Security, Price Volatility and Trade: Some Reflections for Developing Countries*, Issues paper, no. 28, International Centre for Trade and Sustainable Development, Geneva.

DIBP (Department of Immigration and Border Protection) 2015a, *Government response to the Independent Review into the integrity of the subclass 457 programme*, https://www.border.gov.au/about/reports-publications/reviews-inquiries/independent-review-of-the-457-programme/response-to-integrity (accessed 13 May 2016).

—— 2015b, *Subclass 457 quarterly report quarter ending at 30 June 2015*, BR0008, Australian Government.

—— 2015c, *Working Holiday Maker visa programme report 30 June 2015*, BR0110, Australian Government.

—— 2016a, *Independent review of the 457 programme*, http://www.border.gov.au/about/reports-publications/reviews-inquiries/independent-review-of-the-457-programme (accessed 5 July 2016).

—— 2016b, *Legal workers — a guide for employers*, https://www.border.gov.au/Busi/Empl/Empl/employing-legal-workers/legal-workers-a-guide-for-employers (accessed 15 June 2016).

—— 2016c, *Special Program visa (subclass 416) for the seasonal worker programme*, https://www.border.gov.au/Trav/Visa-1/416- (accessed 15 June 2016).

—— 2016d, *Temporary Work (Skilled) visa (subclass 457)*, https://www.border.gov.au/Trav/Visa-1/457- (accessed 15 June 2016).

—— 2016e, *Visa Entitlement Verification Online (VEVO)*, https://www.border.gov.au/Busi/Visa (accessed 16 June 2016).

—— 2016f, *What is labour market testing for subclass 457?*, https://www.border.gov.au/Lega/Lega/Form/Immi-FAQs/what-is-labour-market-testing-for-subclass-457 (accessed 11 July 2016).

—— 2016g, *Work and Holiday visa (subclass 462)*, https://www.border.gov.au/Trav/Visa-1/462- (accessed 15 June 2016).

—— 2016h, *Working Holiday visa (subclass 417)*, https://www.border.gov.au/Trav/Visa-1/417- (accessed 15 June 2016).

—— 2016i, *Working in Australia — six months with one employer*, https://www.border.gov.au/Trav/Work/Empl/WHM-six-months-one-employer (accessed 5 July 2016).

DIIS (Department of Industry, Innovation and Science) 2015a, *Country of Origin Labelling*, http://www.industry.gov.au/industry/IndustrySectors/FoodManufacturingIndustry/Pages/Country-of-Origin-Labelling.aspx#header (accessed 28 September 2015).

—— 2015b, *Country of Origin Labelling: Consultation Regulation Impact Statement*, 4 December, Canberra.

—— 2015c, *Proposed reforms to country of origin food labels — overview*, http://www.industry.gov.au/industry/IndustrySectors/FoodManufacturingIndustry/Pages/Proposed-reforms-to-country-of-origin-food-labels-overview.aspx (accessed 29 September 2015).

—— 2016, *Country of Origin Labelling: Decision Regulation Impact Statement*.

DIRD (Department of Infrastructure and Regional Development) 2014, *Inquiry into Tasmanian Shipping and Freight Transcript of proceedings*, 10 February, Productivity Commission, Canberra, pp. 467–510.

—— 2015a, *Inland Rail 2015*, https://infrastructure.gov.au/rail/inland/files/Inland-rail-Brochure.pdf (accessed 11 July 2016).

—— 2015b, *Submission to the Senate Rural and Regional Affairs and Transport Legislation Committee's inquiry into the Shipping Legislation Amendment Bill 2015*, August.

DIT (Department of Infrastructure and Transport) 2011, *Reforming Australia's Shipping: Regulation Impact Statement*, August, Canberra.

DITRD (Department of Infrastructure, Transport and Regional Development) 2007, *Fatal Heavy Vehicle Crashes Australia Quarterly Bulletin October-December 2007*, Canberra.

—— 2013, *Fatal Heavy Vehicle Crashes Australia Quarterly Bulletin Jan-Mar 2013*.

Dixon, P. and Johnson, D. 1988, 'Pricing of Queensland sugar cane: appraisal of the present formula and a suggestion for reform', *Review of Marketing and Agricultural Economics*, vol. 56, no. 1, pp. 27–35.

DLA Piper Australia 2016a, *Government and livestock industry cost sharing deed in respect of emergency animal disease responses*, 29 January, Version no. 16/01, Animal Health Australia.

—— 2016b, *Government and Plant Industry Cost Sharing Deed in respect of Emergency Plant Pest Responses*, May, Plant Health Australia, Canberra.

DoA (Department of Agriculture) 2014a, *Australian food statistics 2012-13*, CC BY 3.0.

—— 2014b, *Biosecurity Legislation Regulation Impact Statement*, Canberra.

—— 2014c, *Chemicals of Security Concern Regulation Impact Statement Response*.

—— 2014d, *Department of Agriculture Annual Report 2013-14*, September, Australian Government, Canberra.

—— 2014e, *Mandatory Code of Conduct for Grain Export Terminals - Regulation Impact Statement*, September.

—— 2015a, *Agricultural Export Regulation Review: Discussion Paper*, Australian Government, Canberra.

—— 2015b, *Annual Report 2014-15*, Australian Government, Canberra.

—— 2015c, *Australian Animal Welfare Strategy (AAWS) and National Implementation Plan 2010-14*, http://www.agriculture.gov.au/animal/welfare/aaws/australian-animal-welfare-strategy-aaws-and-national-implementation-plan-2010-14 (accessed 10 November 2015).

—— 2015d, *Export Advisory Notice-2015-06 — Revised Risk-Based Auditing Requirements for ESCAS*, 23 March.

—— 2015e, *Submission to the Inquiry into the Voice for Animals (Independent Office of Animal Welfare) Bill 2015*, 2 September, Canberra.

Dobes, L., Leung, J. and Argyrous, G. 2016, *Social Cost-Benefit Analysis in Australia and New Zealand: The State of Current Practice and What Needs To Be Done*, Australian National University, Canberra.

DoE (Department of Employment) 2015a, *Extra places available for employers in the horticulture sector*, https://www.employment.gov.au/news/extra-places-available-employers-horticulture-sector (accessed 26 April 2016).

—— 2016, *Reviews of the Road Safety Remuneration System*, https://www.employment.gov.au/review-road-safety-remuneration-system (accessed 26 April 2016).

DoE (Department of the Environment) 2015b, *National Review of Environmental Regulation Interim Report*, March.

—— 2015c, *Protected Matters Search Tool: Report by Region*, http://www.environment.gov.au/webgis-framework/apps/pmst/pmst-region.jsf (accessed 29 September 2015).

—— nd, *Wild harvest of Australian native animals*, http://www.environment.gov.au/biodiversity/wildlife-trade/natives/wild-harvest (accessed 22 February 2016).

DoF (Department of Finance) 2014, *Australian Government Cost Recovery Guidelines*, July, Resource Management Guide No. 304, Third edition, Australian Government, Parkes ACT.

—— 2016a, *Ministerial Advisory Council on Skilled Migration*, http://www.finance.gov.au/resource-management/governance/register/body/92321/ (accessed 9 June 2016).

—— 2016b, *Public Management Reform Agenda*, Australian Government, Canberra.

DoH (Department of Health) 2014, *The Food Regulation System*, http://www.health.gov.au/internet/main/publishing.nsf/Content/foodsecretariat-system1.htm (accessed 5 January 2016).

Dolling, A. and Peterson, D. 2000, *Genetically Modified Products: A Consumer Choice Framework*, Productivity Commission Staff Working Paper, July.

Dore, J., Binning, C. and Hayes, G. 1999, *Native Vegetation National Overview: States/Territories/Commonwealth Stocktake of Native Vegetation Management*, Report prepared for ANZECC - Environment and Conservation Ministerial Council and Native vegetation managers in all Australian jurisdictions, August.

Dow, C. and Gardiner-Garden, J. 1998, *Indigenous Affairs in Australia, New Zealand, Canada, United States of America, Norway and Sweden*, Background Paper, 6 April, 15.

DPMC (Department of the Prime Minister and Cabinet) 2014, *Regulator Performance Framework*, Canberra.

—— 2015, *Department of Prime Minister and Cabinet Annual Report 2014-15*, Canberra.

DSEWPaC (Department of Sustainability, Environment, Water, Population and Communities) 2013, *Regulation of water market intermediaries, Draft COAG regulation impact statement for consultation*, Canberra.

DUC (Ducks Unlimited Canada) 2009, *A Strategy for Conserving Canada's Natural Capital*.

Dwyer, G., Loke, P., Appels, D., Stone, S. and Peterson, D.C. 2005, 'Integrating Rural and Urban Water Markets in South East Australia: Preliminary Analysis', presented at OECD Workshop on Agriculture and Water: Sustainability, Markets and Policies, Adelaide, 14 November.

Easton, B., Warbey, L., Mezzatesta, B. and Mercy, D.A. 2015, *Animal Welfare Review. DRAFT Report on an independent review of the investment in and administration of the Animal Welfare Act 2002 in Western Australia*.

Ecoeggs 2014, *Watch Our Hens, Live On Camera*, http://www.ecoeggs.com.au/chookcam/?currentPage=6 (accessed 11 April 2016).

EFN (Environmental Farmers Network) 2015, *Policies*, http://www.environmentalfarmersnetwork.net.au/policies_native_veg.php (accessed 31 March 2016).

Ellis, E. 2010, 'Making sausages and law: the failure of animal welfare laws to protect both animals and fundamental tenets of Australia's legal system', *Australian Animal Protection Law Journal*, no. 4, pp. 6–26.

EMC (Essential Media Communications) 2012, *Treatment of animals. Essential media report, November 19*, http://www.essentialvision.com.au/treatment-of-animals (accessed 15 April 2016).

—— 2013, *The Essential Report: Foreign investment*, 24 September, http://www.essentialvision.com.au/foreign-investment (accessed 5 June 2016).

Emmery, M. 1999, *Australian Manufacturing: A Brief History of Industry Policy and Trade Liberalisation*, Research Paper 7 1999-2000, Parliament of Australia, Library, Canberra.

ERAWA (Economic Regulation Authority Western Australia) 2014, *Inquiry into Microeconomic Reform in Western Australia — Final Report*, Economic Regulation Authority Western Australia, Perth.

European Commission 2003, *Regulation No 1892/2003 of the European Parliament and of the Council of 22 September 2003 on Genetically Modified Food and Feed*, 22 September, Brussels.

—— 2009, *Regulation No 41/2009 of 20 January 2009 Concerning the Composition and Labelling of Foodstuffs Suitable for People Intolerant to Gluten*, 20 January, Brussels.

—— 2016a, *Special Eurobarometer 442, Attitudes of Europeans towards Animal Welfare, Summary*.

—— 2016b, *Traceability and Labelling*, http://ec.europa.eu/food/plant/gmo/traceability_labelling/index_en.htm (accessed 17 June 2016).

Evidentiary 2014, *Review of the Native Vegetation Act 2003 — An evidence based review*, NSW Farmers Association.

Fair Work Ombudsman 2015, *A report on the Fair Work Ombudsman's Inquiry into the labour procurement arrangements of the Baiada Group in New South Wales*, June, Melbourne.

FAO (Food and Agriculture Organization of the United Nations) 2016, *FAOSTAT*, http://faostat3.fao.org/home/E (accessed 23 February 2016).

—— and WHO (Food and Agriculture Organization of the United Nations and World Health Organization) 2008, *Standard for Foods for Special Dietary Use for Persons Intolerant to Gluten: Codex Stan 118-1979*, http://www.fao.org/fao-who-codexalimentarius/download/standards/291/CXS_118e_2015.pdf (accessed 7 April 2016).

Fargione, J., Hill, J., Tilman, D., Polasky, S. and Hawthorne, P. 2008, 'Land clearing and the biofuel carbon debt', *Science*, vol. 319, no. 5867, pp. 1235–1238.

Farmar-Bowers, Q. and Lane, R. 2009, 'Understanding farmers' strategic decision-making processes and the implications for biodiversity conservation policy', *Journal of Environmental Management*, vol. 90, pp. 1135–1144.

Farmer, B. 2011, *Independent Review of Australia's Livestock Export Trade (Farmer Review)*, Canberra.

FAWC (Farm Animal Welfare Committee) 2011, *Economics and Farm Animal Welfare*, December, UK Government, London, UK.

—— 2016, *Farm Animal Welfare Committee Terms of Reference*, UK Government, https://www.gov.uk/government/groups/farm-animal-welfare-committee-fawc#our-terms-of-reference (accessed 31 May 2016).

Finlay, L. 2015, 'A home is no longer a castle? — real property rights in the context of mining and environmental claims', presented at ALRC National Freedoms Symposium, Brisbane, Australian Law Reform Commission, 2 September.

Finlay, R. 2014, *Primary producer perspectives on rural land management in central and western NSW*, PhD Thesis, March, The University of Sydney.

FINSIA (Financial Services Institute of Australasia) 2014, *Regulating Foreign Direct Investment in Australia*, Discussion paper, February, Sydney.

FIRB (Foreign Investment Review Board) 1986, *Report 1984-85*, Canberra.

—— 2006, *Annual Report 2004-05*, Canberra.

—— 2012, *Annual Report 2010-11*, Canberra.

—— 2015a, *Annual Report 2013-14*, Canberra.

—— 2015b, *Exemption certificates for a program of acquisitions of interests in kinds of land*, November, Guidance Note 21.

—— 2015c, *Submission to the Senate Standing Committee on Economics Inquiry into the provisions of the Foreign Acquisitions and Takeovers Legislation Amendment Bill 2015 and related bills*, 17 September, sub. 5, Treasury, Australian Government, Canberra ACT.

—— 2016a, *About FIRB*, https://firb.gov.au/about/ (accessed 16 June 2016).

—— 2016b, *Annual Report 2014-15*.

Fitzgerald, B. 2015, *West Australian husband and wife team take on entire supply chain by processing on farm and retailing through social media*, ABC Rural, http://www.abc.net.au/news/2015-04-28/processing-poultry-on-farm/6425802 (accessed 10 November 2015).

Fletcher, P. (Minister for Major Projects, Territories and Local Government) 2015, *Government accepts Harper Review recommendation on road pricing*, Media release, 24 November, PF041/2015.

FMCSA (Federal Motor Carrier Safety Administration) 2007, *Driver issues: commercial motor vehicle safety literature review*, June.

FOE (Friends of the Earth) 2015, *GM 2.0: Australian Regulators Engineering the Truth*.

Foster, M. 2010, *Evidence of price premiums for non-GM grains in world markets*, Conference Paper 10.04, Australian Bureau of Agricultural and Resource Economics.

Four Corners 2011, 'A Bloody Business', *ABC Television*, http://www.abc.net.au/4corners /stories/2011/08/08/3288581.htm (accessed 17 September 2015).

FPISG (Food Processing Industry Strategy Group) 2012, *Final Report of the Non-Government Members*.

Franklin, A. 2007, 'Human-Nonhuman Animal Relationship in Australia: An Overview of Results from the First National Survey and Follow-up Case Studies 2000-2004', *Society and Animals*, vol. 15, pp. 7–27.

Frawley, P.T., Makin, L., Nieper, R. and Wilson, B. 1999, *Export Assurance National Competition Policy Review of the Export Control Act 1982*, 23 December, National Competition Council, Canberra.

Freeranger Eggs 2016, *Freeranger Eggs — 'What free range farming is all about'*, http://www.freeranger.com.au/ (accessed 5 July 2016).

FREPA (Free Range Egg & Poultry Australia Limited) 2015, *FREPA Free Range Egg Standards*, http://www.frepa.com.au/wp-content/uploads/2015/06/FREPA_Egg_ Standards_2015.pdf (accessed 13 January 2016).

FRFA Inc. (Free Range Farmers Association Inc.) 2016, *Hen Welfare*, http://www.freerangefarmers.com.au/hen-welfare.html (accessed 12 January 2016).

Friedman, T.L. 2005, *The world is flat: A brief history of the twenty-first century*, Farrar, Straus and Giroux, New York.

FSANZ (Food Standards Australia New Zealand) 2008, *Consumer Attitudes Survey 2007: A Benchmark Survey of Consumers' Attitudes to Food Issues*, Canberra.

—— 2003, *Report on the Review of Labelling of Genetically Modified Foods*, December.

—— 2009, *Proposal P301 — Primary Production and Processing Standard for Eggs & Egg Products – Quantitative Survey of Consumer Behaviour and Egg Consumption*, September.

—— 2011a, *Final Assessment Report – Proposal P301 — Primary Production & Processing Standard for Eggs and Egg Products*, 7 April.

—— 2011b, *Proposal P301 — Primary Production & Processing Standard for Eggs & Egg Products – Regulation Impact Statement*.

—— 2012, *Food traceability*, http://www.foodstandards.gov.au/industry/safetystandards /traceability/pages/default.aspx (accessed 3 April 2016).

—— 2013a, *GM food labelling*, http://www.foodstandards.gov.au/consumer/gmfood /labelling/Pages/default.aspx (accessed 28 March 2016).

—— 2013b, *New Plant Breeding Techniques: Report of a Workshop Hosted by Food Standards Australia New Zealand*.

—— 2014, *Australia and New Zealand Ministerial Forum on Food Regulation*, http://www.foodstandards.gov.au/code/fofr/pages/default.aspx (accessed 15 April 2016).

—— 2015a, *Australia's Safe Food System: Background*, http://www.foodstandards.gov.au /about/background/pages/default.aspx (accessed 5 January 2016).

—— 2015b, *Changing the Code*, http://www.foodstandards.gov.au/code/changes/Pages/default.aspx (accessed 7 April 2016).

—— 2015c, *Egg Standard*, http://www.foodstandards.gov.au/code/primaryproduction/egg/pages/default.aspx (accessed 9 March 2016).

—— 2015d, *Food Standards Code from 1 March 2016*, http://www.foodstandards.gov.au/code/Pages/Food-Standards-Code-from-1-March-2016.aspx (accessed 5 January 2016).

—— 2015e, *Response to Studies Cited as Evidence of Adverse Effects from GM Foods*, http://www.foodstandards.gov.au/consumer/gmfood/adverse/pages/default.aspx (accessed 24 March 2016).

—— 2016a, *Application Handbook*, 1 March, Canberra.

—— 2016b, *Country of origin labelling*, http://www.foodstandards.gov.au/consumer/labelling/coo/Pages/default.aspx (accessed 29 September 2015).

—— 2016c, *Current GM applications and approvals*, http://www.foodstandards.gov.au/consumer/gmfood/applications/pages/default.aspx (accessed 21 January 2016).

—— 2016d, *General information about GM foods*, http://www.foodstandards.gov.au/consumer/gmfood/gmoverview/Pages/default.aspx (accessed 7 July 2016).

—— 2016e, *Safety Assessments of GM Foods*, http://www.foodstandards.gov.au/consumer/gmfood/safety/Pages/default.aspx (accessed 21 April 2016).

FWC (Fair Work Commission) 2014, *Harvester Case*, https://www.fwc.gov.au/waltzing-matilda-and-the-sunshine-harvester-factory/documents/harvester-case (accessed 6 June 2016).

—— 2015, *4 yearly review*, https://www.fwc.gov.au/awards-and-agreements/modern-award-reviews/4-yearly-review (accessed 12 March 2015).

—— 2016, *4 yearly review of modern awards - Casual employment and Part-time employment, issues paper*, 11 April.

FWO (Fair Work Ombudsman) 2015, *Minimum wages*, https://www.fairwork.gov.au/how-we-will-help/templates-and-guides/fact-sheets/minimum-workplace-entitlements/minimum-wages (accessed 15 June 2016).

—— 2016, *Enforcement of RSRO 2016*, Media release, 15 April, https://www.fairwork.gov.au/about-us/news-and-media-releases/2016-media-releases/april-2016/20160415-rsro-order-2016 (accessed 31 May 2016).

Gabb, A. 2014, *Submission to the Agricultural Competitiveness White Paper*, 16 April.

Gali, J. and Taplin, B. 2012, *The macroeconomic effects of lower capital inflow*, Economic Roundup Issue 3, Treasury, Parkes ACT.

Geoff Neumann and Associates 2005, *Review of the Australian Model Codes of Practice For the Welfare of Animals. Final Report*, http://webarchive.nla.gov.au/gov/20080804052056/http://www.daffa.gov.au/animal-plant-health/welfare/nccaw/codes?SQ_DESIGN_NAME=text_only (accessed 26 June 2016).

Geoscience Australia nd, *Sustainable Groundwater Management*, http://www.ga.gov.au/about/what-we-do/projects/water/sustainable-groundwater-management (accessed 30 October 2015).

Gibbs, C., Harris-Adams, K. and Davidson, A. 2013, *Review of Selected Regulatory Burdens on Agriculture and Forestry Businesses*, November, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

Glass, C., Hutchinson, W. and Beattie, V. 2005, 'Measuring the value to the public of pig welfare improvements: a contingent valuation approach', *Animal Welfare*, vol. 14, no. 1, pp. 61–69.

GMA (Grocery Manufacturers Association) 2016, *Vermont GMO Labeling Law*, http://www.gmaonline.org/issues-policy/state-affairs/vermont/ (accessed 31 March 2016).

GM-Free Australia Alliance 2014, *Right to Know: GM-Free Product List October 2014*.

Goesch, T., Lawson, K., Green, R. and Morey, K. 2015a, *Australia's beef supply chains: infrastructure issues and implications*, October, Research report 15.7, Australian Bureau of Agricultural and Resource Economics and Sciences.

Golden Rice Humanitarian Board 2016, *Vitamin A Deficiency*, http://www.goldenrice.org/Content3-Why/why1_vad.php (accessed 28 June 2016).

Gooday, P. 2015, 'Farm performance and the role of structural adjustment', presented at ABARES Outlook Conference, Canberra, Australian Bureau of Agricultural and Resource Economics and Sciences.

Goodfellow, J. 2016, 'Regulatory Capture and the Welfare of Farm Animals in Australia', in Cao, D. and White, S. (eds), *Animal Law and Welfare - International Perspectives*, Springer, Switzerland.

——, Tensen, M. and Bradshaw, L. 2014, 'The Future of Farm Animal Welfare Policy and its Implications for Australian Livestock Industries', *Farm Policy Journal*, vol. 11, no. 1, pp. 39-49.

De Gorter, H., Just, D.R. and Tan, Q. 2009, 'The Socially Optimal Import Tariff and Tax Credit for Ethanol with Farm Subsidies', *Agricultural and Resource Economics Review*, vol. 38, no. 1, pp. 65–77.

Goucher, G. 2011, *Transport costs for Australian agriculture*, December, Australian Farm Institute.

Government of Western Australia 2009, *Reducing the Burden — Report of the Red Tape Reduction Group*, Perth.

Grafton, R.Q., Mullen, J. and Williams, J. 2015, *Australia's Agricultural Future: Returns, Resources and Risks*, Report prepared for the Australian Council of Learned Academies Export Working Group, Securing Australia's Future Project SAF07 'Australia's Agricultural Future', 8 May.

GrainGrowers 2015, *Submission to House of Representatives Standing Committee on Agriculture and Industry Inquiry into Agricultural Innovation*.

Grandin, T. 2014, 'Making Slaughterhouses more humane for cattle, pigs and sheep', *Farm Policy Journal*, vol. 11, no. 1, pp. 9–31.

Gray, E.M., Oss-Emer, M. and Sheng, Y. 2014, *Australian agricultural productivity growth: past reforms and future opportunities*, February, Report no. 14.2, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

GRDC (Grains Research and Development Corporation) nd, *Apps*, https://grdc.com.au/Resources/Apps (accessed 29 May 2016).

Greater Hume Shire 2012, *Right to Farm Policy*, 31 December, 105, New South Wales.

Griffith, G. 2015, *Right to Farm Laws*, June, e-brief 5/2015, NSW Parliamentary Research Service.

Growcom 2015, *Submission to House of Representatives Standing Committee on Agriculture and Industry Inquiry into Agricultural Innovation*, Fortitude Valley, Qld.

Guasch, J.L., Racine, J.-L., Sanchez, I. and Diop, M. 2007, *Quality Systems and Standards for a Competitive Edge*, 40516, Directions in Development - Trade, World Bank, Washington DC.

Hafi, A., Arthur, T., Symes, M. and Millist, N. 2013, *Benefit-cost analysis of the long term containment strategy for exotic fruit flies in the Torres Strait*, ABARES report to client prepared for the National Biosecurity Committee, Canberra.

Hafi, A., Donkor, A., Kyann, Z. and Gray, E. 2015, *The value of Australia's biosecurity system at the farm gate, An analysis of avoided trade and on-farm impacts*, ABARES research report 15.2, Department of Agriculture, Canberra.

——, Spring, D., Croft, L., Kompas, T. and Morey, K. 2014, *Cost-effectiveness of Biosecurity Response Options to Red Imported Fire Ants in South East Queensland*, Report to client prepared for the National Biosecurity Committee, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

Hanratty, P. 1995, *Inward Direct Foreign Investment in Australia: Policy Controls and Economic Outcomes*, Research Paper 32, Parliamentary Research Service, Canberra.

Hanson, F. 2012, *The Lowy Institute Poll 2012, Australia and New Zealand in the World, Public Opinion and Foreign Policy*, Lowy Institute for International Policy, Sydney, http://www.lowyinstitute.org/publications/lowy-institute-poll-2012-public-opinion-and-foreign-policy (accessed 10 May 2016).

Hanson, R. 2016, 'Grazier lashes Biosecurity Tasmania red tape delay for feed', Hobart, *The Mercury*, 18 January.

Harding, T. and Rivers, G. 2015, *Australian Animal Welfare Standards and Guidelines: Livestock at Saleyards and Depots - Decision Regulation Impact Statement*, Victorian Department of Economic Development, Jobs, Transport and Resources.

Harper, I., Anderson, P., McCluskey, S. and O'Bryan, M. 2015, *Competition Policy Review: Final Report*, Australian Government, Canberra.

Harris-Adams, K., Townsend, P. and Lawson, K. 2012, *Native vegetation management on agricultural land*, November, Research report 12.10, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

Harrison, M. 2009, 'Assessing the Impact of Regulatory Impact Assessments', *Agenda*, vol. 16, no. 3.

Hartcher, C. (Minister for Resources and Energy) 2011, *NSW Government suspends biodiesel mandate increase*, Media release, 22 December.

Harvey, D. and Hubbard, C. 2013, 'Reconsidering the political economy of farm animal welfare: An anatomy of market failure', *Food Policy*, vol. 38, pp. 105–114.

Heikkila, J. 2011, 'Economics of biosecurity across levels of decision making: a review', *Agronomy for Sustainable Development*, vol. 31, pp. 119–138.

Hemsworth, P., Coleman, G. and Skuse, J. 2014, 'Do Natural Settings Safeguard the Welfare of Domesticated Animals?', *Farm Policy Journal*, vol. 11, no. 1, pp. 1–7.

Hepburn, G. 2006, *Alternatives to Traditional Regulation*, OECD Regulatory Policy Division, Paris.

Hepburn, S. 2011, *Not quite The Castle: why miners have a right to what's under your land*, The Conversation, https://theconversation.com/not-quite-the-castle-why-miners-have-a-right-to-whats-under-your-land-4176 (accessed 5 November 2015).

—— 2015, *Submission to the Landholders' Rights to Refuse (Gas and Coal) Bill 2015*.

Herring, R. 1996, *Banking Disasters: Causes and Preventative Measures: Some Extrapolations from Recent U.S. Experience*, Paper — Foundation for Advanced Information and Research/Wharton Joing Conference on Issues in International Risk, Tokyo, Japan.

Higgins, A. 2013, *Livestock industry logistics: optimising industry capital investment and operations*, CSIRO.

Hills Orchard Improvement Group Inc. 2013, *Regulator Engagement with Small Business — Submission to the Australian Government Productivity Commission*.

Hockey, J. (Treasurer) 2013a, *Foreign investment application: Archer Daniels Midland Company's proposed acquisition of GrainCorp Limited*, http://jbh.ministers.treasury.gov.au/media-release/026-2013/ (accessed 11 July 2016).

—— 2013b, *Foreign Investment Decision 12 November 2013*, http://jbh.ministers.treasury.gov.au/media-release/018-2013/ (accessed 11 July 2016).

—— 2015, *Foreign investment decision 4 March 2015*, http://jbh.ministers.treasury.gov.au/media-release/014-2015/ (accessed 11 July 2016).

—— and Abbott, T. (Prime Minister) 2015, *Government strengthens the foreign investment framework*, http://jbh.ministers.treasury.gov.au/media-release/034-2015/ (accessed 23 June 2016).

Holmes, J. 2000, 'Pastoral lease tenures as policy instruments 1847-1997', *Environmental History and Policy: Still Settling Australia,*, Oxford University Press, South Melbourne.

—— 2014, 'Explorations in Australian Legal Geography: The Evolution of Lease Tenures as Policy Instruments', *Geographical Research*, vol. 52, no. 4, pp. 411–429.

Holmes Sackett 2014, *A snapshot of the red tape costs on farm in Australia*.

Honore, A. 1961, 'Ownership', *Oxford Essays in Jurisprudence*, Clarendon Press, Oxford, p. 133.

Hooke, A.W. 1967, 'Farm Investment', in Williams, D.B. (ed), *Agriculture in the Australian Economy*, Sydney University Press, Sydney, pp. 198–210.

Hooper, S., Martin, P., Love, G. and Fisher, B.S. 2002, 'Farm Size and Productivity: Where Are the Trends Taking Us?', *Australian Commodities: Forecasts and Issues*, vol. 9, no. 3, pp. 495–500.

HoRSCAI (House of Representatives Standing Committee on Agriculture and Industry) 2014, *A Clearer Message for Consumers: Report on the Inquiry into Country of Origin Labelling for Food*, October, Parliament of Australia, Canberra.

HoRSCE (House of Representatives Standing Committee on the Environment) 2014, *Streamlining environmental legislation — Inquiry into streamlining environmental regulation, 'green tape', and one stop shops*, December, Parliament of Australia, Canberra.

HoRSCRA (House of Representatives Standing Committee on Regional Australia) 2011, *Of drought and flooding rains — Inquiry into the impact of the Guide to the Murray-Darling Basin Plan*, May, Parliament of Australia, Canberra.

HRSCE (House of Representatives Standing Committee on Economics) 2014, *Report on Foreign Investment in Residential Real Estate*, November, Parliament of Australia, Canberra.

Humane Society International 2015, *Humane Choice True Free Range Standards — Poultry*, Version 2.3, Avalon, NSW.

—— nd, *Animal Welfare Labels: Consumer Guide to Free Range Eggs*.

Hunter, J. 2016, 'Validation of the Greater Hunter Native Vegetation Mapping as it pertains to the Upper Hunter region of New South Wales', *Ecological Management & Restoration*, vol. 17, no. 1, pp. 40–46.

HVCI (Heavy Vehicle Charging and Investment Reform) 2014, *Submission to the Productivity Commission Inquiry into Public Infrastructure*.

IC (Industry Commission) 1991, *Statutory Marketing Arrangements for Primary Products*, Report no. 10, Canberra.

—— 1992, *The Australian Sugar Industry*, Report no. 19, Canberra.

—— 1996, *Industry Commission Submission to the Sugar Industry Review*, September, Melbourne.

IMF (International Monetary Fund) 2008, *Globalization: a brief overview*, Issues Brief, 02/08, Washington DC.

—— 2009, *Balance of Payments and International Investment Position Manual*, Sixth, BPM6, Washington DC.

Implementation Sub-Committee of the Food Regulation Standing Committee 2006, *National Food Safety Audit Policy*, http://www.health.gov.au/internet/publications/publishing.nsf/Content/nat-food-safety-aud-pol/$FILE/nat-food-safety-aud-pol.pdf (accessed 5 April 2016).

Industry Canada 2013, *Investment Canada Act — Thresholds*, Government of Canada, http://www.ic.gc.ca/eic/site/ica-lic.nsf/eng/h_lk00050.html (accessed 15 June 2016).

—— 2016, *Decisions —- Investment Canada Act*, Legislation and Regulations, Government of Canada, https://www.ic.gc.ca/eic/site/ica-lic.nsf/eng/h_lk00014.html (accessed 8 April 2016).

Infrastructure Australia 2013, *National Road Asset Reporting Pilot*.

Inland Revenue 2015, *Coming to New Zealand for the short term*, http://www.ird.govt.nz /international/comingleaving/coming/temp/coming-to-nz-temp.html (accessed 15 June 2016).

IPART (Independent Pricing and Regulatory Tribunal) 2015, *Ethanol mandate — options to increase the uptake of ethanol blended petrol*, May.

IPCC (International Plant Protection Convention) 2016, *Who we are — International Plant Protection Convention*, https://www.ippc.int/en/who-we-are/ (accessed 11 April 2016).

ITS Global 2008, *Foreign Direct Investment in Australia — the increasing cost of regulation*, 9 September, Melbourne.

IWG (Interagency Working Group on Commonwealth Water Information Provision) 2016, *Providing water information to the Commonwealth*, Bureau of Meteorology, Melbourne.

Iyer, K., Rambaldi, A. and Tang, K. 2009, 'How trade and foreign investment affect the growth of a small but not so open economy: Australia?', *Applied Economics*, vol. 41, no. 12, pp. 1525-1532.

Jackson, J. 2016, *The Committee on Foreign Investment in the United States (CFIUS)*, 19 February, RL33388, Congressional Research Service, Washington DC.

Jaguar Consulting 2014, *Review of the road safety remuneration system*, 16 April.

Jasper, C., Felton-Taylor, A. and Vidot, A. 2016, 'Vote Compass: Australians want closer eye on farm sales to foreigners', *ABC News*, 25 May, http://www.abc.net.au/news /2016-05-25/vote-compass-foreign-investment/7432598 (accessed 30 May 2016).

JBS Australia 2013, *Submission JBS Australia Pty Limited.*, 20 December, Submission to the Productivity Commission Tasmanian Shipping and Freight Inquiry.

Joyce, B. (Deputy Prime Minister and Minister for Agriculture) 2014, *Ag ministers unite*, Media release, 5 May http://minister.agriculture.gov.au/joyce/Pages/Media-Releases/ag-ministers-unite.aspx (accessed 12 November 2015).

—— 2015a, *Putting the cherry on top for exporters*, Media release, http://minister.agriculture.gov.au/joyce/Pages/Media-Releases/Putting-the-cherry-on-top-for-exporters.aspx (accessed 5 April 2016).

—— 2015b, *Live export reform targets areas of greatest risk*, Media release. http://minister.agriculture.gov.au/joyce/Pages/Media-Releases/live-export-reform.aspx (accessed 2 March 2016)

—— 2016a, *Approved arrangements for livestock exporters now in effect*, Media release, http://minister.agriculture.gov.au/joyce/Pages/Media-Releases/approved-arrangements-for-livestock-exporters.aspx (accessed 11 April 2016).

—— 2016b, *Hatching new market access for poultry products*, Media release, http://minister.agriculture.gov.au/joyce/Pages/Media-Releases/hatching-new-market-access-for-poultry-products.aspx (accessed 27 June 2016).

—— 2016c, *Improved ag consultation extends to strawberry patch*, Media release, http://minister.agriculture.gov.au/joyce/Pages/Media-Releases/ag-consult-extends-to-strawberry-patch.aspx (accessed 27 June 2016).

—— and Hockey, J. (Treasurer) 2015, *Strengthening scrutiny and transparency around foreign investment in agriculture — land register starts 1 July*, http://minister.agriculture.gov.au /joyce/Pages/Media-Releases/foreign-inv-land-register.aspx (accessed 10 May 2016).

—— and Ruston, A. (Assistant Minister for Agriculture and Water Resources) 2016, *Project to train new Authorised Officers gathers PASE*, 9 March http://minister.agriculture.gov.au

/joyce/Pages/Media-Releases/project-to-train-new-aos-gathers-pase.aspx (accessed 5 April 2016).

JSCRS (Joint Select Committee on the Retailing Sector) 1999, *Fair Market or Market Failure? A review of Australia's retailing sector*, August, Parliament of Australia, Canberra.

Julie Dang & Associates 2012, *Production Methods Understanding & QA evaluation*, Market Research Report Prepared for: Australian Egg Corporation Limited, May.

Kaiser, A. 2011, *Roman Urban Street Networks: Streets and the Organization of Space in Four Cities*, Routledge.

Kalinova, B., Palerm, A. and Thomsen, S. 2010, *OECD's FDI Restrictiveness Index: 2010 Update*, 2010/03, OECD Working Papers on International Investment, OECD Publishing, Paris.

Kehlbacher, A., Bennett, R. and Balcombe, K. 2012, 'Measuring the consumer benefits of improving farm animal welfare to inform welfare labelling', *Food Policy*, vol. 37, no. 6, pp. 627–633.

Keogh, M. 2013, *Australian farmers generally refuse to be cooperative.*, Australian Farm Institute, http://www.farminstitute.org.au/ag-forum/australian-farmers-persistently-refuse-to-cooperate (accessed 1 April 2016).

—— 2014, *Vegetation laws are bad for farmers and the environment*, Australian Farm Institute, http://www.farminstitute.org.au/ag-forum/vegetation-laws-are-bad-for-farmers-and-the-environment (accessed 8 February 2016).

—— and Goucher, G. 2016, *A sustainable and nationally coordinated plant biosecurity RD&E system for Australia. A discussion paper prepared for the Plant Biosecurity Cooperative Research Centre*.

Kimberley Land Council 2014, *What is native title?*, http://www.klc.org.au/native-title/what-is-native-title (accessed 16 November 2015).

King & Wood Mallesons 2014, *Submission to the Agricultural Competitiveness White Paper*.

Kirchner, S. 2008, *Capital Xenophobia II: Foreign Direct Investment in Australia, Sovereign Wealth Funds, and the Rise of State Capitalism*, CIS Policy Monograph 88, The Centre for Independent Studies, St Leonards, NSW.

Klumpp, D.R. 2014, *Committee Hansard*, 10 November, Senate Environment and Communications References Committee, Biosecurity Tasmania, p. 44.

Kompas, T. 2016, 'Best investments in biosecurity and the limits to cost-benefit analysis', presented at Outlook 2016, Investing in agriculture - growing our future, Canberra, Australian Bureau of Agricultural and Resource Economics and Sciences, March.

Kotsios, N. 2016, *Eggs Peak Body Slams Free-Range Boycott Call*, http://www.weeklytimesnow.com.au/news/politics/eggs-peak-body-slams-freerange-boycott-call/news-story/25a666cb72b4bd9e9d972cc24ddd2446 (accessed 12 April 2016).

Krugman, P.R., Obstfeld, M. and Melitz, M.J. 2015, *International Economics: Theory and Policy*, 10th edn, Pearson, Boston, Massachusetts.

Lagerkvist, C.J. and Hess, S. 2011, 'A meta-analysis of consumer willingness to pay for farm animal welfare', *European Review of Agricultural Economics*, vol. 38, no. 1, pp. 55–78.

Laurenceson, J., Burke, P.F. and Wei, E. 2015, 'The Australian Public's Preferences Over Foreign Investment in Agriculture', *Agenda*, vol. 22, no. 1, pp. 45–60.

Law Council of Australia 2014, *Supplementary submission to the House of Representatives Standing Committee on the Environment Inquiry into streamlining environmental regulation, 'green tape', and one-stop-shops*, 17 July, Canberra.

Lawes, M., Greiner, R., Leiper, I., Ninnis, R., Pearson, D. and Boggs, G. 2015, 'The effects of a moratorium on land-clearing in the Douglas-Daly region, Northern Territory, Australia.', *The Rangeland Journal*, vol. 37, pp. 399–408.

Layton, A.P. and Makin, T. 1993, 'Estimates of the macroeconomic impact of foreign investment in Australia', *International Economic Journal*, vol. 7, no. 4, pp. 35–42.

Lewis, J. 1967, 'Agricultural price policies', in Williams, D. (ed), *Agriculture in the Australian Economy*, Sydney University Press, Sydney, pp. 299 – 314.

Lewis, J.N. 1961, 'Organized Marketing of Agricultural Products in Australia', *Australian Journal of Agricultural Economics*, vol. 5, no. 1, pp. 1–8.

Liberal Party of Australia 2012, *The Coalition's Policy Discussion Paper on Foreign Investment in Australian agricultural land and agribusiness*, Discussion Paper, August, Barton ACT.

LINZ (Land Information New Zealand) 2016a, *Decision summaries & statistics*, http://www.linz.govt.nz/regulatory/overseas-investment/decision-summaries-statistics (accessed 8 April 2016).

—— 2016b, *Overseas Investment Fees Review —- Regulatory Impact Statement*, 30 March, A2067056, New Zealand Government, Wellington.

—— 2016c, *Overseas Investment Fees, (Second) Regulatory Impact Statement*, 30 April, A2361707, New Zealand Government, Wellington.

—— 2016d, *Proposed Overseas Investment Fees Structures and Fees*, 5 May, New Zealand Government, Wellington.

Llewellyn, D. 2014, *Genetically Modified Organisms Control Amendment Bill 2014 (No. 18), Second Reading Debate*, Hansard (House of Assembly), 21 August, Parliament of Tasmania.

Lloyd, A. 1982, 'Marketing agricultural products', in Williams, D. (ed), *Agriculture in the Australian Economy*, Second Edition, Sydney University Press, Sydney, pp. 353–382.

Locke, S. 2013, 'Foreign investment success at Cubbie Station', *ABC Rural*, 17 October, http://www.abc.net.au/news/2013-10-17/cubbie-foreign-investment/5028296 (accessed 30 May 2016).

—— 2016, 'Farmers continue to debate the merits of genetically modified crops as Monsanto marks 20 years of GM in Australia', *ABC Rural*, 6 June, http://www.abc.net.au/news/2016-06-06/monsanto-marks-20-years-gm-crops-australia-as-debate-continues/7473978 (accessed 9 June 2016).

Lockie, S. and Pietsch, J. 2012, *Public Opinion on Food Security*, ANU College of Arts and Social Sciences, http://lyceum.anu.edu.au/wp-content/blogs/3/uploads//Food%20Security_Poll.pdf (accessed 24 March 2016).

Luck, G., Race, D. and Black, R. 2011, *Demographic change in Australia's rural landscapes: implications for society and the environment*, CSIRO Publishing.

Ludlow, M. and Greber, J. 2016, 'Tree clearing continues apace in Qld', *Australian Financial Review*, 6 March.

Lusk, J.L. and Norwood, F.B. 2011, 'Animal Welfare Economics', *Applied Economic Perspectives and Policy*, vol. 33, no. 4, pp. 463–483.

Lusk, J.L. and Rozan, A. 2008, 'Public policy and endogenous beliefs: the case of genetically modified food', *Journal of Agricultural and Resource Economics*, vol. 33, no. 2, pp. 270–289.

Madge Australia Inc. 2007, *Submission to the GM review panel by Madge*.

—— 2010, *Review of Food Labelling Law and Policy: Submission of Madge Australia Inc.*

Makunike, C. 2009, 'Large-Scale Agricultural Investment in Africa: Points to Ponder', in Kugelman, M. and Levenstein, S. (eds), *Land Grab? The Race for the World's Farmland*, Woodrow Wilson International Center for Scholars, Washington DC, pp. 85–93.

Mallawaarachchi, T. and Szakiel, S. 2007, *Nonbroadscale land clearing in southern Australia: economic issues in managing native vegetation on farm land*, ABARE research report 07.2, January, Australian Bureau of Agricultural and Resource Economics, Canberra.

——, Walcott, J., Hughes, N., Gooday, P., Georgeson, L. and Foster, A. 2009, *Promoting productivity in the agriculture and food sector value chain: issues for R&D investment*, ABARE and BRS report to the Rural R&D Council, Australian Bureau of Agricultural and Resource Economics, Canberra.

Matthews, K. 2011, *A review of Australia's preparedness for the threat of foot-and-mouth disease*, October, Department of Agriculture, Fisheries and Forestry, Canberra.

MAV (Municipal Association of Victoria) 2016, *Planning & building*, http://www.mav.asn.au /policy-services/planning-building/Pages/default.aspx (accessed 2 March 2016).

McEwen, G. 2011, *Animal Law: Principles and Frontiers*, Barristers Animal Welfare Panel (e-book), http://bawp.org.au/animal-law-e-book/ (accessed 27 May 2016).

McInerney, J. 2004, *Animal Welfare, Economics and Policy. Report on a study undertaken for the Farm and Animal Health Economics Division of DEFRA*, http://archive.defra.gov.uk /evidence/economics/foodfarm/reports/documents/animalwelfare.pdf (accessed 29 June 2016).

McKeon, G., Watson, I., Hall, W., Henry, B., Power, S. and Stone, G. 2004, 'Summary', *Pasture Degradation and Recovery in Australia's Rangelands - Learning from History*, Department of Natural Resources, Mines and Energy, Queensland, Indooroopilly, Queensland.

McKissack, A. and Xu, J. 2016, *Foreign investment into Australia*, January, Working Paper 2016-01, Foreign Investment and Trade Policy Division, Treasury, Parkes ACT.

McNamara, J. 2015, *Strengthening Australia's foreign investment framework — OBPR Assessment Advice*, 5 August, Office of Best Practice Regulation, Department of the Prime Minister and Cabinet, Barton ACT.

MDBA (Murray-Darling Basin Authority) 2014, *Trade of groundwater water access rights*, Guidelines for Water Trading Rules, Murray-Darling Basin Authority, Canberra.

—— 2015, *Basin Plan Annual Report 2014–15*, Canberra.

—— 2016a, *Progress on water recovery*, http://www.mdba.gov.au/managing-water/environmental-water/progress-water-recovery (accessed 27 May 2016).

—— 2016b, *Sustainable diversion limits*, http://www.mdba.gov.au/basin-plan-roll-out/sustainable-diversion-limits (accessed 27 May 2016).

MDC (Mildura Development Corporation) 2014, *Getting 'on track' with rail investment*, 5 November.

Meadows, J., Emtage, N. and Herbohn, J. 2014, 'Engaging Australian small-scale lifestyle landowners in natural resource management programmes — Perceptions, past experiences and policy implications', *Land Use Policy*, no. 36, pp. 618–627.

Meat and Livestock Australia 2015, *Livestock Global Assurance Program*, http://www.livestockglobalassurance.org/about (accessed 8 March 2016).

MEM (Meeting of Environment Ministers) 2015, *Agreed Statement 15 December 2015*.

Mifsud, C. and Valle, H. 2015, *Australian vegetable growing farm businesses, an economic survey, 2013-14 and 2014-15*, Prepared for Horticulture Innovation Australia Limited, December, Research report 15.10, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

MLA (Meat and Livestock Australia) 2014, *Exporter Supply Chain Assurance System — Development of a risk management and quality assurance program*.

—— 2015, *Odour and waste management*, http://www.mla.com.au/Research-and-development/Feeding-finishing-nutrition/Lotfeeding-intensive-finishing/Odour-waste-management (accessed 22 February 2016).

Mobil 2015, *Mobil submission to the Queensland Government Biofuels discussion paper*, July.

Moffatt, C.R. and Musto, J. 2013, 'Salmonella and egg-related outbreaks', *Microbiology Australia*, vol. 34, no. 2, pp. 94–98.

MOFGA (Maine Organic Farmers and Gardeners Association) 2016, *GMO Foods Labeling in Maine*, http://www.mofga.org/Programs/PublicPolicyInitiatives/RightToKnowGMOMaine/tabid/2540/Default.aspx (accessed 31 March 2016).

Moir, B. 2011, *Foreign investment and Australian agriculture*, November, RIRDC Publication No. 11/173, Rural Industries Research and Development Corporation, Barton ACT.

Montemayor, R.Q. 2009, 'Overseas Farmland Investments - Boon or Bane for Farmers in Asia?', in Kugelman, M. and Levenstein, S.L. (eds), *Land Grab? The Race for the World's Farmland*, Woodrow Wilson International Center for Scholars, Washington DC, pp. 95–107.

Morrison, S. (Treasurer) 2015, *Statement on decision to prevent sale of S. Kidman & Co. Limited*, http://sjm.ministers.treasury.gov.au/media-release/011-2015/ (accessed 31 May 2016).

—— 2016a, *Approval of foreign investment application for purchase of the Tasmanian Land Company*, http://sjm.ministers.treasury.gov.au/media-release/014-2016/ (accessed 23 June 2016).

—— 2016b, *Preliminary decision of foreign investment application for purchase of S. Kidman & Co Limited*, http://sjm.ministers.treasury.gov.au/media-release/050-2016/ (accessed 10 May 2016).

Mundt, A. 2015, 'Australia's need for an independent office of animal welfare', *Global Journal of Animal Law*, vol. 1, pp. 1–26.

Murray Irrigation 2014, *2014 Statutory Review of the Water Act 2007 — Submission to the Independent Expert Panel*, July, Deniliquin.

Murtough, G., Aretino, B. and Matysek, A. 2002, *Creating Markets for Ecosystem Services*, Productivity Commission Staff Research Paper, Canberra.

Myers, P. 2009, 'Bull run', *The Sydney Morning Herald*, 20 March.

—— 2010, 'Pickin' winners', *The Australian*, 9 December.

Naald, B.V. and Cameron, T.A. 2011, 'Willingness to pay for other species' well-being', *Ecological Economics*, vol. 70, no. 7, pp. 1325–1335.

Nairn, M.E., Allen, P.G., Inglis, A.R. and Tanner, C. 1996, *Australian Quarantine: A Shared Responsibility*, Australian Quarantine Review Committee Secretariat, Department of Primary Industries and Energy, Canberra.

Nalder, D. (Minister for Agriculture and Food) and Redman, T. (Minister for Regional Development) 2016, *Potato industry moves to deregulation*, Media Statement, Perth, 15 April.

Napper, M. and Wein, A. 2015, *Independent Review of the Horticulture Code of Conduct: Final Report*, Department of Agriculture and Water Resources, Canberra.

National Landcare Programme 2014, *Regional NRM organisations*, http://www.nrm.gov.au/regional/regional-nrm-organisations (accessed 4 November 2015).

National Native Title Tribunal 2011, *Developing indigenous land use agreements: a guide for local government*, July.

—— 2015, *National Native Title Register*, National Native Title Tribunal, http://www.nntt.gov.au/searchRegApps/NativeTitleRegisters/Pages/Search-National-Native-Title-Register.aspx (accessed 19 November 2015).

Natural Resource Management Ministerial Council 2010, *Australia's Biodiversity Conservation Strategy 2010–2030*, Department of Sustainability, Environment, Water, Population and Communities, Canberra.

NAWAC (National Animal Welfare Advisory Committee) 2011, *NAWAC Guideline 01: Approach to consideration of draft codes of welfare*, New Zealand Ministry of Primary Industries, https://www.mpi.govt.nz/protection-and-response/animal-welfare/overview/national-animal-welfare-advisory-committee/ (accessed 5 July 2016).

NBC (National Biosecurity Committee) 2014, *National Surveillance and Diagnostics Framework*, June, Canberra.

—— 2015, *Modernising Australia's approach to managing established pests and diseases of national significance*, 1 June, Canberra.

NCA (National Commission of Audit) 2014, *Towards Responsible Government Phase Two Report of the National Commission of Audit*.

Nelson, R., Howden, M. and Stafford Smith, M. 2008, 'Using adaptive governance to rethink the way science supports Australian drought policy', *Environmental Science and Policy*, vol. 11, pp. 588–601.

—— and Lawrance, L. 2004, 'Resource use in Agriculture: Crops Expected to Remain More Profitable than Livestock in Medium Term', *Australian Commodities*, vol. 11, no. 1, p. 27.

New Zealand Commerce Commission 2015, *Place of origin representations*, http://www.comcom.govt.nz/fair-trading/fair-trading-act-fact-sheets/place-of-origin-representations/ (accessed 29 January 2016).

New Zealand Treasury 2015, *Government Expectations for Regulatory Stewardship*.

Newell, N. 2003, *Gene Technology (New South Wales) Bill, Gene Technology (Gm Crop Moratorium) Bill. Second Reading*.

NFF (National Farmers' Federation) 2010, *Heavy Vehicle Pricing Review: Submission*.

—— 2013a, *Blueprint for Australian Agriculture 2013-2020*, February.

—— 2013b, *The Multiple Land Use Framework Research Study — Final Briefing Paper*, Submission, 14 March, Canberra.

—— 2014a, *Submission in Response to the Agricultural Competitiveness Green Paper*, 12 December.

—— 2014b, *Submission to the 2014 Review of the Water Act 2007*, National Farmers' Federation, Canberra.

—— 2015a, *Submission on the Shipping Legislation Amendment Bill 2015*, 21 August.

—— 2015b, *Submission to the Productivity Commission on the Migrant Intake into Australia*, 12 June.

—— 2015c, *Submission to the Traditional Rights and Freedoms — Encroachments by Commonwealth Laws — ALRC Report 127 (Interim)*, September.

—— 2015d, *Submission to Treasury Options Paper — Strengthening Australia Foreign Investment Framework*, 20 March.

—— 2016a, *NFF welcomes new labelling rules*, http://www.nff.org.au/read/5239/nff-welcomes-new-labelling-rules.html?hilite=egg+labelling (accessed 12 April 2016).

—— 2016b, *Petition Launched Against Proposed Backpackers' Tax*, http://www.nff.org.au/read/5182/petition-launched-against-proposed-backpackers-tax.html (accessed 9 June 2016).

—— 2016c, *Submission to the Senate Economics Legislation Committee's inquiry into the Foreign Investment Review Framework.*, sub. 7, Barton ACT.

Nguyen, N., Green, R., Lawson, K. and Goesch, T. 2015, *Australia's wheat supply chains infrastructure issues and implications*, March, Research Report No. 15.1, Australian Bureau of Agricultural and Resource Economics and Sciences.

——, Hogan, L., Lawson, K., Gooday, P., Green, R., Harris-Adams, K. and Mallawaarachchi, T. 2013, *Infrastructure and Australia's food industry: Preliminary economic assessment*, November, Research Report 13.13, Australian Bureau of Agricultural and Resource Economics and Sciences.

NHVR (National Heavy Vehicle Regulator) 2013, *Local government and the Heavy Vehicle National Law*, November.

—— 2015a, *Annual Report 2014-2015*, Fortitude Valley, Qld.

—— 2015b, *Electronic Work Diaries*, https://www.nhvr.gov.au/safety-accreditation-compliance/fatigue-management/work-diaries-and-record-keeping/electronic-work (accessed 23 October 2015).

—— 2015c, *Livestock Transport Fatigue Management Scheme Implementation Guide*, July, Fortitude Valley, Qld.

—— 2015d, *New South Wales Class 1 Agricultural Vehicles (Notice) 2015 (No. 1)*.

—— 2016a, *Frequently asked questions - access management - temporary arrangements for access permit applications*, https://www.nhvr.gov.au/about-us/faq/access-management #t390n840 (accessed 12 May 2016).

—— 2016b, *Guidelines for granting access*, https://www.nhvr.gov.au/road-access/local-government-road-managers/guidelines-for-granting-access (accessed 23 May 2016).

—— 2016c, *Health check on Australia's heavy vehicle fleet*, https://www.nhvr.gov.au /news/2016/04/05/health-check-on-australia%E2%80%99s-heavy-vehicle-fleet (accessed 2 June 2016).

—— 2016d, *Heavy Vehicle National Law and Regulations*, https://www.nhvr.gov.au/law-policies/heavy-vehicle-national-law-and-regulations (accessed 25 February 2016).

—— 2016e, *Higher mass limits*, 20 April, https://www.nhvr.gov.au/road-access/mass-dimension-and-loading/higher-mass-limits (accessed 20 April 2016).

—— 2016f, *Improved performance tool to boost freight*, https://www.nhvr.gov.au/news /2016/01/19/improved-performance-tool-to-boost-freight (accessed 25 May 2016).

—— 2016g, *Journey planner*, https://www.nhvr.gov.au/road-access/journey-planner (accessed 11 April 2016).

—— 2016h, *National heavy vehicle general dimension requirements*, https://www.nhvr.gov.au/files/201602-0113-general-dimension-requirements.pdf (accessed 3 June 2016).

—— 2016i, *PBS road and bridge access*.

—— 2016j, *Pre-approved routes*, https://www.nhvr.gov.au/road-access/local-government-road-managers/pre-approved-routes (accessed 20 April 2016).

—— 2016k, *Restricted access vehicles*, Compliance bulletin I.

Nicholl, C. 2014, *Submission to the Agricultural Competitiveness Green Paper, Number 2 Submission*, 22 December.

Nicoletti, G., Golub, S.S., Hajkova, D., Mirza, D. and Yoo, K.-Y. 2003, *The influence of policies on trade and foreign direct investment*, 36, 2003/1, OECD Economic Studies, OECD Publishing, pp. 7–83.

Nocella, G., Hubbard, L. and Scarpa, R. 2010, 'Farm Animal Welfare, Consumer Willingness to Pay, and Trust: Results of a Cross-National Survey', *Applied Economic Perspectives and Policy*, vol. 32, no. 2, pp. 275–297.

Nossal, K. and Gooday, P. 2009, *Raising Productivity Growth in Australian Agriculture*, Issues insights 09.7, Australian Bureau of Agricultural and Resource Economics, Canberra.

NPAC (National Parks Australia Council) 2012, *Submission to the Inquiry into the effectiveness of threatened species and ecological communities' protection in Australia*, 18 December.

NRAC (National Rural Advisory Council) 2012, *Report on the Effectiveness of the Farm Management Deposits Scheme*, October.

NSW DPI (NSW Department of Primary Industries) 2016a, *Review of Rice Vesting Proclamation - Information Paper*, Orange.

—— 2007, *Living and Working in Rural Areas*.

—— 2013a, *NSW Floodplain Harvesting Policy*, Office of Water, Sydney, p. 17.

—— 2013b, *Opal mining on the alluvial soils at Lightning Ridge - Report on a visit to Lightning Ridge conducted on 29 November 2012*.

—— 2015a, *Key questions and answers — Biosecurity Act 2015*, http://www.dpi.nsw.gov.au /content/biosecurity/biosecurity-act-2015/key-questions-and-answers (accessed 6 July 2016).

—— 2015b, *NSW Right to Farm Policy*, December.

—— 2016b, *Complaints regarding general animal welfare and cruelty*, http://www.dpi.nsw.gov.au/content/agriculture/livestock/animal-welfare/general/cruelty (accessed 20 April 2016).

NSW DPIW (NSW Department of Primary Industries Water) nd, *Harvestable rights - dams*, http://www.water.nsw.gov.au/water-licensing/basic-water-rights/harvesting-runoff (accessed 8 July 2016).

NSW EPA (NSW Environment Protection Authority) 2013a, *Abattoirs*, http://www.epa.nsw.gov.au /mao/abattoirs.htm (accessed 9 May 2016).

—— 2013b, *Pesticides Act 1999*, http://www.epa.nsw.gov.au/pesticides/pesticidesact.htm #pestpermits (accessed 8 June 2016).

—— 2015, *Managing pesticides in NSW*, https://www.epa.nsw.gov.au/pesticides /pestmmngngNSW.htm (accessed 2 March 2016).

NSW Farmers' Association 2012, *NSW Farmers submission to the NSW Government Native Vegetation Regulation Review*, August, Sydney.

—— 2014, *NSW Farmers submission to the Independent Biodiversity Legislation Review Panel*, September, St Leonards.

—— 2015, *Egg Industry and Consumers Like Eggs 'Same Way'*, https://www.nswfarmers.org.au/ news/global-news/egg-industry-and-consumers-like-their-eggs-the-same-way (accessed 13 April 2016).

NSW Food Authority 2005, *Regulatory Impact Statement: Amendment Food Regulation 2004, NSW Food Act 2003, Egg Food Safety Scheme*, September, New South Wales.

—— 2015a, *Egg stamping*, http://www.foodauthority.nsw.gov.au/industry/eggs/egg-stamping (accessed 4 April 2016).

—— 2015b, *Requirements for Egg Producers*.

—— 2016, *Audits in the food industry*, http://www.foodauthority.nsw.gov.au/ip/audits-and-compliance/audits-of-licensed-businesses (accessed 5 April 2016).

NSW Government 2013, *Crown Lands Management Review*, New South Wales.

—— 2014a, *Crown Lands for the Future: Crown Lands Management Review Summary and Government Response*, New South Wales.

—— 2014b, *Crown Lands Legislation White Paper*, 4 February, New South Wales.

—— 2015a, *Election Commitments 2015-2019. Building our future.*, http://www.budget.nsw.gov.au/__data/assets/pdf_file/0008/126377/Election_Commitments_2015-19.pdf (accessed 14 April 2016).

—— 2015b, *Response to Crown Lands Legislation White Paper: Summary of Issues and Government Response*, October, New South Wales.

—— 2016, *Sustain. Invest. Protect. A new approach to land management and conservation in NSW*, https://www.landmanagement.nsw.gov.au/ (accessed 9 May 2016).

NSW NRC (NSW Natural Resources Commission) 2014a, *Submission to the Independent Biodiversity Legislation Review Panel*, September, Document No: D14/2777, Sydney.

—— 2014b, *Weeds – Time to get serious Review of weed management in NSW Final report and recommendations*, May, Document No. D14/0968, Sydney.

—— 2016, *Shared Problem, Shared Solutions: Pest Animal Management Review*, Draft Report, March.

NSW OEH (NSW Office of Environment & Heritage) 2011, *What is a bioregion?*, http://www.environment.nsw.gov.au/bioregions/BioregionsExplained.htm (accessed 19 November 2015).

—— 2013, *Irrigation salinity*, Land and Soil, http://www.environment.nsw.gov.au/salinity/solutions/irrigation.htm (accessed 5 July 2016).

—— 2015, *Native vegetation*, http://www.environment.nsw.gov.au/vegetation/ (accessed 16 September 2015).

NSW Office of Water 2014, *NSW Murrumbidgee allocation and Murray trade restrictions*, Media Release, 29 October, NSW Department of Primary Industries, Sydney.

NSWIC (New South Wales Irrigators' Council) 2014, *Submission to the 2014 Review of the Water Act 2007*, New South Wales Irrigators' Council, Sydney.

NSWRMS (New South Wales Roads and Maritime Services) 2015, *Heavy Vehicle Safety Stations (HVSS)*, http://www.rms.nsw.gov.au/business-industry/heavy-vehicles/safety-compliance/inspections-checks/heavy-vehicle-safety-stations.html (accessed 23 May 2016).

NSW Trade & Investment 2012, *Review of Rice Vesting by the Rice Marketing Board under the NSW Rice Marketing Act 1983*, Sydney.

NT DLRM (Northern Territory Department of Land Resource Management) 2015, *Non-Pastoral Use Permits*, http://www.lrm.nt.gov.au/rangeland/non-pastoral-use-permits (accessed 12 October 2015).

—— 2016, *Land Clearing*, http://www.lrm.nt.gov.au/land-clearing (accessed 21 February 2016).

NTC (National Transport Commission) nd, *Work program 2015-19*.

—— 2008a, *Safe payments addressing the underlying causes of unsafe practices in the road transport industry*, October.

—— 2008b, *Submission to Australia's Future Tax System Review*.

—— 2011, *Heavy Vehicle National Law Regulation Impact Statement*, September.

—— 2013, *2014 Heavy Vehicle Charges Determination, Draft Regulatory Impact Statement*.

—— 2014, *National transport reform implementation monitoring report, report to the Transport and Infrastructure Council*, December.

—— 2015, *Primary Duties for Chain of Responsibility Parties and Executive Officer Liability Policy Paper*, November.

NTDT (Northern Territory Department of Transport) 2014, *Northern Territory Inspection Manual for Heavy Vehicles*, 26 November.

Nufarm Limited 2014, *Agricultural Competitiveness Issues Paper — Submission by Nufarm Ltd*.

NWC (National Water Commission) 2010, *The impacts of water trading in the southern Murray–Darling Basin — An economic, social and environmental assessment*, National Water Commission, Canberra.

—— 2014a, *Fourth Assessment of the 2004 National Water Initiative*, National Water Commission, Canberra.

—— 2014b, *National Water Commission — Publications*, http://www.nwc.gov.au/publications (accessed 29 May 2016).

NZ Ministry for Primary Industries 2016, *National Animal Welfare Advisory Committee*, https://www.mpi.govt.nz/protection-and-response/animal-welfare/overview/national-animal-welfare-advisory-committee/ (accessed 12 April 2016).

NZ Treasury (New Zealand Treasury) 2009, *Regulatory impact statement — proposed increases to the overseas investment fees*, 3 September, New Zealand Government, Wellington.

O'Dwyer, K. (Minister for Small Business) 2016, *Working Holiday Maker Visa review*, Liberal Party of Australia, https://www.liberal.org.au/latest-news/2016/05/17/working-holiday-maker-visa-review (accessed 9 June 2016).

O'Malley, T.R. 2009, *Mateship and Money-Making: Shearing in Twentieth Century Australia*, Thesis, July, University of Sydney.

Oakton Accounting and Assurance 2016, *Application Duration Statistics*.

OBPR (Office of Best Practice Regulation) 2015, *Best Practice Regulation Report 2013-14*, Department of Prime Minister and Cabinet, Australian Government, Canberra.

OECD (Organisation for Economic Co-operation and Development) 2000, *Genetically Modified Foods - Widening the Debate on Health and Safety*, Paris.

—— 2007, *Tax Effects on Foreign Direct Investment: Recent Evidence and Policy Analysis*, 17, OECD Tax Policy Studies, Paris.

—— 2009, *Regulatory Impact Analysis: A Tool for Policy Coherence*.

—— 2010, *OECD Reviews of Regulatory Reform - Risk and regulatory policy - Improving the governance of risk*, Paris.

—— 2013, *National Treatment for Foreign-Controlled Enterprises Including Adhering Country Exceptions to National Treatment*, Paris.

—— 2015a, *OECD FDI Regulatory Restrictiveness Index*, OECD.stat database, http://www.oecd.org/investment/fdiindex.htm (accessed 17 June 2016).

—— 2015b, *OECD Regulatory Policy Outlook 2015*, Paris.

—— 2015c, *Policy in Perspective: A Reader's Companion to the OECD Regulatory Policy Outlook 2015*, Paris.

OGTR (Office of the Gene Technology Regulator) 2011, *Submission to the Review of the Gene Technology Act 2000*.

—— 2013, *Risk Analysis Framework 2013*.

—— 2014, *Governance Arrangements*, http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/governance-1 (accessed 13 October 2015).

OIE (World Organisation for Animal Health) 2016a, *Animal welfare at a glance*, http://www.oie.int/en/animal-welfare/animal-welfare-at-a-glance/ (accessed 24 March 2016).

—— 2016b, *Our missions: OIE - World Organisation for Animal Health*, http://www.oie.int/index.php?id=53#c201 (accessed 11 April 2016).

—— 2016c, *Terrestrial Animal Health Code. Chapter 7.1*, Paris.

Oliver, A. 2013, *The Lowy Institute Poll 2013, Australia and the World, Public Opinion and Foreign Policy*, Lowy Institute for International Policy, Sydney.

Oliver, A. 2014, *The Lowy Institute Poll 2014*, Lowy Institute for International Policy, Sydney.

Pannell, D. and Roberts, A. 2015, 'Public goods and externalities: agri-environmental policy measures in Australia', *OECD Food, Agriculture and Fisheries Papers*, No. 80, Paris.

Parbery, P. and Wilkinson, R. 2012, *Victorians' attitudes to farming*, January, Research Papers 2012.3, Victorian Department of Primary Industries, Melbourne.

Parliament of New South Wales 2016, *Legislative Council Minutes of Proceedings No. 53, Wednesday 23 March*, Sydney.

Parliament of South Australia Economic and Finance Committee 2015, *Inquiry into the labour hire industry*, June.

Patterson, J., Mugera, A. and Burton, M. 2015, 'Consumer preferences for Welfare Friendly Production Methods: The Case of Chicken Production in Western Australia.', presented at 59th AARES Annual Conference, Rotorua, New Zealand, 10 February.

PC (Productivity Commission) 1998, *Battery Eggs Sale and Production in the ACT*, Research Report, Canberra.

—— 2000, *Single-Desk Marketing: Assessing the Economic Arguments*, Productivity Commission Staff Research Paper, Canberra.

—— 2001a, *Cost Recovery by Government Agencies*, Report no. 15, Canberra.

—— 2001b, *Structural Adjustment: Key Policy Issues*, Commission Research Paper, Canberra.

—— 2002a, *Impact of a Foot and Mouth Disease Outbreak on Australia*, Research report, Canberra.

—— 2002b, *Pastoral Leases and Non-Pastoral Land Use*, Commission Research Paper, Canberra.

—— 2003, *Water Rights Arrangements in Australia and Overseas*, Commission Research Paper, Canberra.

—— 2004a, *Impacts of Native Vegetation and Biodiversity Regulations*, Report no. 29, Canberra.

—— 2004b, *Workers Compensation and OHS Frameworks*, Report no. 27, Canberra.

—— 2006a, *Road and Rail Freight Infrastructure Pricing*, Report no. 41, Canberra.

—— 2006b, *Rural Water Use and the Environment: The role of market mechanisms*, Research report, Canberra.

—— 2007, *Annual Review of Regulatory Burdens on Business — Primary Sector*, Research report, Canberra.

—— 2008a, *Annual Review of Regulatory Burdens on Business: Manufacturing and Distributive Trades*, Research Report, August, Canberra.

—— 2008b, *Chemicals and Plastics Regulation*, Research report, Canberra.

—— 2008c, *Safeguards Inquiry into the Import of Pigmeat — Final Report*, Report no. 44, Canberra.

—— 2009, *Performance Benchmarking of Australian and New Zealand Business Regulation: Food Safety*, Research report, Canberra.

—— 2010a, *Bilateral and Regional Trade Agreements*, Research Report, Canberra.

—— 2010b, *Market Mechanisms for Recovering Water in the Murray-Darling Basin*, Research report, Canberra.

—— 2010c, *Wheat Export Marketing Arrangements*, Inquiry Report no. 51, Canberra.

—— 2011a, *Australia's Urban Water Sector*, Inquiry Report no. 55, Canberra.

—— 2011b, *Carbon Emission Policies in Key Economies: Responses to Feedback on Certain Estimates for Australia*, Supplement to Research Report, Canberra.

—— 2011c, *Identifying and Evaluating Regulation Reforms*, Research Report, Canberra.

—— 2011d, *Performance Benchmarking of Australian Business Regulation: Planning, Zoning and Development Assessments*, Research report, Canberra.

—— 2011e, *Rural Research and Development Corporations*, Report no. 52, Canberra.

—— 2012a, *Barriers to Effective Climate Change Adaptation*, Report no. 59, Canberra.

—— 2012b, *Business Regulation Benchmarking: Role of Local Government*, Research report, Canberra.

—— 2012c, *Impacts and Benefits of COAG Reforms: Business Regulation and VET*, Research Report, Canberra.

—— 2012d, *Regulation Impact Analysis: Benchmarking*, Research Report, Canberra.

—— 2013a, *Major Project Development Assessment Processes*, Research Report, Canberra.

—— 2013b, *Mineral and Energy Resource Exploration*, Inquiry Report no. 65, Canberra.

—— 2013c, *Regulator Engagement with Small Business*, Research Report, Canberra.

—— 2014a, *Access to Justice Arrangements*, Inquiry Report no. 61, Canberra.

—— 2014b, *Costs of Doing Business in Australia: Dairy Product Manufacturing*, Research Report, Canberra.

—— 2014c, *Geographic Labour Mobility*, Research Report, Canberra.

—— 2014d, *Public Infrastructure*, Inquiry Report no. 71, Canberra.

—— 2014e, *Relative Costs of Doing Business in Australia: Retail Trade*, Research Report, Canberra.

—— 2014f, *Submission to the Agricultural Competitiveness Taskforce*, April, Canberra.

—— 2014g, *Submission to the Competition Policy Review*, Canberra.

—— 2014h, *Tasmanian Shipping and Freight*, Inquiry Report no. 69, Canberra.

—— 2015a, *Barriers to Growth in Service Exports*, Research Report, Canberra.

—— 2015b, *Business Set-up, Transfer and Closure*, Report no. 75, Canberra.

—— 2015c, *Examining Barriers to More Efficient Gas Markets*, Commission Research Paper, Canberra.

—— 2015d, *Migrant Intake into Australia, Draft Report*, November, Canberra.

—— 2015e, *Mutual Recognition Schemes*, Research Report, Canberra.

—— 2015f, *Workplace Relations Framework*, Report no. 76, Canberra.

—— 2016, *Telecommunications Universal Service Obligation: Productivity Commission Issues Paper*.

Phillips, C., and Petherick, J. 2015, 'The Ethics of a Co-regulatory Model For Farm Animal Welfare Research', *Journal of Agricultural and Environmental Ethics*, vol. 28, no. 1, pp. 127-142.

PIRSA (Primary Industries and Regions SA) 2013, *Identifying Planning Issues on Rural/Primary Industry Land*, December, Adelaide.

Plant Health Australia 2010, *National Plant Biosecurity Strategy*, December, Canberra.

PMC (Potato Marketing Corporation of Western Australia) 2015, *Annual Report 2014-2015*, Perth.

Polyakov, M., Pannell, D., Pandit, R., Tapsuwan, S. and Park, G. 2015, 'Capitalized Amenity Value of Native Vegetation in a Multifunctional Rural Landscape', vol. 97, no. 1, pp. 299–314.

Pompeo, M. 2015, *H.R.1599: Safe and Accurate Food Labeling Act of 2015 — 114th Congress (2015-2016)*, legislation, https://www.congress.gov/bill/114th-congress/house-bill/1599/text (accessed 31 March 2016).

Port Jackson Partners 2012, *Greener Pastures: The Global Soft Commodity Opportunity for Australia and New Zealand*, October, Issue 3, ANZ Insight, Australia and New Zealand Banking Group Limited, Melbourne, Australia.

Potard, G. 2015, *Designing Balanced and Effective Farm Animal Welfare Policies for Australia*, April, Australian Farm Institute, Surry Hills.

Price, G. 2010, 'Maintaining Our Food Choices', *The Australian Coeliac*.

ProAnd Associates 2016, *Regulatory costs in the red meat and livestock industries*.

PwC (PricewaterhouseCoopers Australia) 2011, *Road Safety Remuneration System: Regulatory Impact Statement*, November, Department of Education, Employment and Workplace Relations, Canberra.

—— 2013, *Review of the Animal Welfare Standards and Guidelines Development Process*, July, Department of Agriculture, Fisheries and Forestry, Canberra.

—— 2015, *Containerised cargo demand assessment Northern NSW*, September, Northern NSW Containerised Cargo Demand Assessment, Transport for New South Wales.

—— 2016, *Review of the road safety remuneration system final report*, January, Department of Employment.

Pyne, C. 2016, *Extract from House of Representatives Hansard Road Safety Remuneration Repeal Bill 2016 Second Reading speech*, 18 April.

QAO (Queensland Audit Office) 2016, *Heavy Vehicle Road Access Reforms*, June, Report 20: 2015-16, Brisbane.

QDEHP (Queensland Department of Environment and Heritage Protection) 2015, *Native animal management*, https://www.ehp.qld.gov.au/licences-permits/plants-animals/native_animal_management.html (accessed 22 February 2016).

—— 2016, *ERA 28 - sugar milling or refining — crushing or grinding 200 tonnes or more of sugar cane in a year; or manufacturing 200 tonnes or more of sugar or other sugarcane products in a year*, http://www.ehp.qld.gov.au/services/index.php?item_id=35757 (accessed 21 February 2016).

QDEWS (Queensland Department of Energy and Water Supply) 2015, *Towards a clean energy economy: achieving a biofuel mandate for Queensland*, Discussion Paper.

—— 2016, *Queensland biofuel mandate*, https://www.dews.qld.gov.au/electricity/renewables/fuels/mandate (accessed 30 June 2016).

QDILGP (Queensland Department of Infrastructure, Local Government and Planning) 2016, *Queensland Planning Provisions version 4.0*, January.

QDNR and QDLGP (Queensland Department of Natural Resources and Queensland Department of Local Government and Planning) 1997, *Planning guidelines*.

QDNRM (Queensland Department of Natural Resources and Mines) 2014, *Annual Outlook 2014 Queensland Regional Natural Resource Management Investment Program 2013-2018*.

—— 2015, *Annual reports on administration of the Foreign Ownership of Land Register Act 1988*, https://www.dnrm.qld.gov.au/our-department/corporate-publications/annual-reports-foreign-ownership-land (accessed 10 May 2016).

QDTMR (Queensland Department of Transport and Main Roads) 2013, *Moving freight — A strategy for more efficient freight movement*, December.

—— 2015, *National heavy vehicle charges*.

—— 2016, *Approved inspection station scheme*, http://www.tmr.qld.gov.au/Business-and-industry/Accreditations/Approved-inspection-station.aspx (accessed 23 May 2016).

—— and LGAQ (Local Government Association of Queensland Ltd) 2013, *The Roads and Transport Alliance Agreement 2013-2018 Memorandum of Agreement between the Department of Transport and Main Roads and Local Government Association of Queensland Ltd*, July.

QFF (Queensland Farmers' Federation) 2012, *Environmental Management and Planning Legislation - A Guide for Graziers*, Brisbane.

—— 2015, *Planning for healthy agriculture (version 2)*, Brisbane.

QPC (Queensland Productivity Commission) 2015, *Decision Regulatory Impact Statement: Sugar Industry (Real Choice Marketing) Amendment Bill 2015*, November.

—— 2016, *About the Commission*, http://www.qpc.qld.gov.au/about-the-commission/ (accessed 22 June 2016).

QSDIIC (Queensland State Development, Infrastructure and Industry Committee) 2013, *Inquiry into the future and continued relevance of government land tenure across Queensland*, Parliamentary Committee Final Report, May, Report No. 25, Brisbane.

QTHLGC (Queensland Transport, Housing and Local Government Committee) 2014, *Inquiry into coastal sea freight*, December, Report no. 59, Brisbane.

Quantum Market Research 2015, *Defining Consumer Expectations: What Production Practices Are Necessary to Underpin Confidence in Free-Range Egg Labelling?*, September.

Queensland Department of Agriculture and Fisheries 2013, *About the eradication program*, https://www.daf.qld.gov.au/plants/weeds-pest-animals-ants/invasive-ants/fire-ants/national-red-imported-eradication-program/fire-ant-eradication (accessed 14 April 2016).

Queensland Government 2013a, *Enforcing the Animal Care and Protection Act*, https://www.business.qld.gov.au/industry/agriculture/animal-management/land-management-for-livestock-farms/welfare-movement-livestock/animal-welfare/animal-welfare-law/enforcing-animal-protection-act (accessed 24 February 2016).

—— 2013b, *Land tenure statistical information*, https://data.qld.gov.au/dataset/land-tenure-statistical-information/resource/eb4ea8ab-1d4d-4f1d-9c69-72987d8ead3f (accessed 2 March 2016).

—— 2015a, *Overland flow*, Business and industry portal, https://www.business.qld.gov.au/industry/water/managing-accessing/accessing-water/authorisations/overland-flow (accessed 5 July 2016).

—— 2015b, *Rules for heavy vehicles*, https://www.qld.gov.au/transport/safety/heavy/rules/index.html (accessed 23 May 2016).

—— 2015c, *South East Queensland Koala Conservation State Planning Regulatory Provisions*, November.

—— 2015d, *Types of land tenure*, https://www.qld.gov.au/environment/land/state/use/leases/ (accessed 12 February 2016).

—— 2016, *Conversion of Leasehold tenure - Version 4.00*, PUX/952/121.

Rabobank 2016, *Australian grain sector in 'war of attrition' to capture value along supply chain*, https://www.rabobank.com.au/media-releases/2016/160113-australian-grain-sector-in-war-of-attrition-to-capture-value-along-supply-chain/ (accessed 30 May 2016).

Race, D. and Curtis, A. 2013, 'Reflections on the effectiveness of market-based instruments to secure long-term environmental gains in southeast Australia: Understanding landholders' experiences', *Society and Natural Resources*, vol. 26, pp. 1050–1065.

Rama, I. and Harvey, S. 2009, *Market Failure and the Role of Government in the Food Supply Chain: an Economic Framework*, Economics and Policy Research Branch Policy and Strategy Group, Victorian Department of Primary Industries.

——, ——, Heaney, A. and Peterson, D. 2012, *Meeting Policy Challenges of Rural and Peri-urban Land Use in Australia: Government, Governance and Public Policy*, January, Research paper 2012.1, Victorian Department of Primary Industries.

RDAFCW (Regional Development Australia Fitzroy and Central West) 2015, *Growing Central Queensland Review*.

Regulation Taskforce 2006, *Rethinking Regulation: Report of the Taskforce on Reducing Regulatory Burdens on Business*, Report to the Prime Minister and the Treasurer, August, Canberra.

Retailer and Supplier Roundtable Ltd 2014, *Paddock to Plate: Reform of Regulations to Enhance Competitiveness, Increase Productivity and Decrease the Cost of Doing Business*, August.

RFNRC (Rail Freight Network Review Committee) 2007, *Switchpoint: the template for rail freight to revive and thrive!*, Victorian Department of Infrastructure.

Ricegrowers' Association of Australia 2012, *Submission to the Review of Rice Vesting by the Rice Marketing Board under the NSW Rice Marketing Act 1983*, August, Leeton, NSW.

—— 2015, *DPI Water needs to improve on inter-valley trade*, Media Release, 9 December, Leeton, http://www.rga.org.au/news/news-archive/dpi-water-needs-to-improve-on-inter-valley-trade.aspx (accessed 5 July 2016).

Richardson, B. 2001, 'The politics and economics of wool marketing, 1950–2000', *Australian Journal of Agricultural and Resource Economics*, vol. 45, no. 1, pp. 95–115.

Rio Tinto 2015, *Ngarluma Aboriginal Corporation awarded sub lease for Karratha pastoral station*, http://www.riotinto.com/media/media-releases-237_15838.aspx (accessed 14 June 2016).

RIRDC (Rural Industries Research and Development Corporation) 2016, *Agvet Priority List*, http://www.rirdc.gov.au/research-programs/rural-people-issues/national-rural-issues/agvet-chemicals (accessed 11 April 2016).

Rittel, H.W.J. and Webber, M.M. 1973, 'Dilemmas in a general theory of planning', *Policy Sciences*, vol. 4, no. 2, pp. 155–169.

RMB (Rice Marketing Board) 2015a, *4th Annual Report to NSW Rice Growers October 2015*, Leeton, NSW.

—— 2015b, *Rice Marketing Board — Annual Report 2014-15*, Sydney, p. 42.

—— 2016, *Rice Marketing Board —- Objects*, http://www.rmbnsw.org.au/objects (accessed 29 June 2016).

Roberts, J. and Runge, G. 2011, *Egg Stamping: Benefits, Feasibility and Options for Australian Egg Producers*, November, Australian Egg Corporation Limited, North Sydney.

Rod Sims 2013, 'Thoughts on Market Concentration Issues', https://www.accc.gov.au/speech /thoughts-on-market-concentration-issues (accessed 31 March 2016).

Rodriguez, D., Targa, F. and Belzer, M. 2006, 'Pay Incentives and Truck Driver Safety: A Case Study', *Industrial and Labor Relations Review*, vol. 59, no. 2, pp. 205–225.

RSPCA 2015, *Layer Hens: RSPCA Approved Farming Scheme Standards*, September, Australian Capital Territory.

—— 2016a, *Free Range Hens: What will 'Meaningful' Mean to Them?*, http://www.rspca.org.au/media-centre/news/2016/free-range-hens-what-will-%E2%80% 9Cmeaningful%E2%80%9D-mean-them (accessed 12 April 2016).

—— 2016b, *Free Range Standards*, http://rspca.org.au/campaigns/layer-hens-0 (accessed 12 April 2016).

RSPCA Western Australia 2015, *Submission to the Legislative Council Select Committee inquiry into the operations of RSPCA Western Australia*.

RSRT (Road Safety Remuneration Tribunal) 2013a, *About the Road Safety Remuneration Orders*, RSRT Guide.

—— 2013b, *Decision: Road Transport and Distribution and Long Distance Operations Road Safety Remuneration Order 2014*, 17 December.

S. Kidman & Co Ltd 2016, *About S. Kidman & Co*, http://www.kidman.com.au/about/ (accessed 20 June 2016).

SA Attorney-General's Department 2013, *Discussion Paper: Industry Code for Growing Free Range Eggs in South Australia*, Adelaide.

—— 2016, *Voluntary Industry Code for Free Range Eggs in South Australia*, http://www.agd.sa.gov.au/voluntary-industry-code-free-range-eggs-south-australia-0 (accessed 13 January 2016).

SA EPA (South Australia Environment Protection Authority) 2007, *Guidelines for separation distances*.

SA Health 2016, *Food safety audits*, http://www.sahealth.sa.gov.au/wps/wcm/connect/ public+content/sa+health+internet/protecting+public+health/food+standards/food+safety+audit s (accessed 5 April 2016).

SADTEI (South Australia Department for Transport, Energy and Infrastructure) 2008, *DTEI route assessment for restricted access vehicles*, October.

Safe Work Australia 2014, *Work-related fatalities involving trucks, Australia, 2003 to 2012*, May.

—— 2016a, *Policy Statement Changes to Labelling for Agricultural and Veterinary (Agvet) Chemicals*.

—— 2016b, *Questions on Notice: Additional Estimates 2015-16, EMSQ16-000201*.

SafeWork NSW 2016, *SafeWork NSW*, Youtube, https://www.youtube.com/user/workcovernsw (accessed 8 June 2016).

SANVC (South Australia Native Vegetation Council) 2013, *Native Vegetation Council Guideline, Clearance of Bracken (Pteridium esculentum) regrowth under Regulations 5(1)(zf), 5(1)(zj) & 5(1)(zfa)*, April, Native Vegetation Information Sheet No. 18.

Sapiro, A. 1923, 'Cooperative Marketing', *Iowa Law Bulletin*, vol. 8, p. 193.

Saynal, K. 2014, *Foreign investment in Australian agriculture*, Parliamentary Library Research Paper, 18 February.

SCAFPS (Select Committee on Australia's Food Processing Sector) 2012, *Inquiry into Australia's Food Processing Sector*, August, Canberra.

SCER (Standing Council on Energy and Resources) 2013a, *Multiple Land Use Framework*.

—— 2013b, *Multiple Land Use Framework Background Document*, December.

Schneider, H., Batho, H., Stermshorn, B. and Thiermann, A. 2015, *PVS Evaluation Report, Australia*, November, World Organisation for Animal Health, Paris.

Schwartz, D. and McCarthy, M. 2016, 'Chinese bidder for Australian cattle empire defends investment in foreign farmland', *ABC News*, 29 March.

Sd+D (Strategic design + Development) 2008, *Livestock and meat supply chain pilot study — stage one final report*, Report to the National Transport Commission, Sydney.

SEERC (Senate Education and Employment References Committee) 2016, *A National Disgrace: The Exploitation of Temporary Work Visa Holders*, March, Canberra.

SELC (Senate Economics Legislation Committee) 2012, *Coastal Trading (Revitalising Australian Shipping) Bill 2012 [Provisions] and related bills*, June, Canberra.

Senate Finance and Public Administration References Committee 2010, *Native Vegetation Laws, Greenhouse Gas Abatement and Climate Change Measures*, April, Canberra.

Senate Standing Committees on Environment and Communications 2015, *Landholders' Right to Refuse (Gas and Coal) Bill 2015*, 30 September.

SERC (Senate Economics References Committee) 2015, *Third Party Certification of Food*, December, Canberra.

—— 2016, *Foreign investment review framework*, April, Canberra.

SGS Australia (Société Générale de Surveillance Australia) 2016, *Agriculture and Food*, Brisbane, Queensland, http://www.sgs.com.au/en-GB/Agriculture-Food.aspx (accessed 27 June 2016).

Shaw, A.G.L. 1967, 'History and development of Australian Agriculture', *Agriculture in the Australian Economy*, Sydney University Press, Sydney, pp. 1–28.

Shipping Australia 2014, *Submission by Shipping Australia Limited to the Competition Policy Review*, June.

—— 2015, *Submission to senate inquiry into Shipping Legislation Amendment Bill 2015*, 21 August.

Simpson, M. and Srinivasan, V. 2011, *Australia's Biosecurity Future: Preparing for future biological challenges*, November, CSIRO, Canberra.

Sims, R. 2016, 'Increasing efficiencies in supply chains', presented at ABARES Outlook Conference, Canberra, 2 March.

Sinden, J. 2004, 'Do the public gains from vegetation protection in north-western New South Wales exceed landholders' loss of land value?', *The Rangeland Journal*, vol. 26, no. 2, pp. 204–224.

Snape, R.H. and Orden, D. 2001, 'Integrating import risk and trade benefit analysis', in Anderson, K., McRae, C. and Wilson, D. (eds), *The Economics of Quarantine and the SPS Agreement*, Centre for International Economic Studies, Adelaide and AFFA Biosecurity Australia, Canberra.

South Australian Government 2016, *Annual heavy vehicle inspections*, https://www.sa.gov.au/topics/transport-travel-and-motoring/motoring/vehicles-and-registration/vehicle-inspections/annual-heavy-vehicle-inspections (accessed 23 May 2016).

Southern Riverina Irrigators 2014, *Submission to the 2014 Review of the Water Act 2007*, Southern Riverina Irrigators, Deniliquin.

Spencer, S. 2004, *Price determination in the Australian food industry: A report*, Department of Agriculture, Fisheries and Forestry, Canberra.

Spencer, S. and Kneebone, M. 2012, *FOODmap: An analysis of the Australian food supply chain*, July, Department of Agriculture, Fisheries and Forestry, Canberra.

Sprague, J.-A. 2015, 'Move to give farmers veto over CSG', *Farm Online*, 2 November, http://www.farmonline.com.au/news/agriculture/general/news/move-to-give-farmers-veto-over-csg/2747035.aspx (accessed 23 February 2016).

SRRATLC (Senate Rural and Regional Affairs and Transport Legislation Committee) 2015a, *Inquiry into the Voice for Animals (Independent Office of Animal Welfare) Bill 2015*, October, Canberra.

—— 2015b, *Shipping Legislation Amendment Bill 2015 [Provisions]*, October, Canberra.

SRRATRC (Senate Rural and Regional Affairs and Transport Legislation Committee) 2012, *Australia's biosecurity and quarantine arrangements*, April, Canberra.

—— 2013, *Foreign Investment and the National Interest*, June, Canberra.

—— 2015a, *Current and future arrangements for the marketing of Australian sugar*, Canberra.

—— 2015b, *Grain export networks, including the on- and off-farm storage, transport, handling and export of Australian grain*, June, Canberra.

St John, A. 2014, *Resource development and landholders' rights: a quick guide*, Research paper, 5 March, Parliamentary Library.

Stenning & Associates 2013, *Measuring Red Tape: Understanding the compliance burden on Tasmanian businesses*, January.

Stretch, T., Carter, C. and Kingwell, R. 2014, *The cost of Australia's bulk grain export supply chains: An information paper*, January, Version 2014.3, Australian Export Grains Innovation Centre.

Subcommittee on Domestic Quarantine and Market Access 2016, *Subcommittee on Domestic Quarantine and Market Access*, http://domesticquarantine.org.au/ (accessed 13 April 2016).

Sullivan, K. 2013, 'Comb dispute three decades on', *ABC Rural*, 18 July, http://www.abc.net.au /news/2013-07-18/wide-comb/4828606 (accessed 6 June 2016).

SWA (Safe Work Australia) 2011, *How to manage work health and safety risks*, Code of Practice, December.

—— 2012, *Guide to the Model Work Health and Safety Act*, October.

—— 2013, *Work-related Injuries and Fatalities on Australian Farms*, March.

—— 2014, *Improving the model Work Health and Safety laws — Issues Paper and Consultation Regulation Impact Statement*, July.

—— 2015, *Work-related Traumatic Injury Fatalities, Australia 2014*, October.

—— 2016a, *Harmonisation — Background*, http://www.safeworkaustralia.gov.au/sites/swa/model-whs-laws/background/pages/background (accessed 15 June 2016).

—— 2016b, *Jurisdictional progress on the model work health and safety laws*, http://www.safeworkaustralia.gov.au/sites/swa/model-whs-laws/pages/jurisdictional-progress-whs-laws (accessed 15 June 2016).

—— 2016c, *Labelling of workplace hazardous chemicals*, http://www.safeworkaustralia.gov.au /sites/swa/whs-information/hazardous-chemicals/labelling/pages/labelling (accessed 5 July 2016).

Swan, W. (Treasurer) 2009, 'Foreign Investment and the Long Road to Recovery', presented at Thomson Reuters Newsmakers Series, Sydney, 4 August.

Swinburne University of Technology 2006, *The Swinburne National Technology and Society Monitor: 2006 Monitor*.

—— 2009, *The Swinburne National Technology and Society Monitor: 2009 Monitor*.

—— 2012, *The Swinburne National Technology and Society Monitor: 2011 Monitor*.

Tang, G., Qin, J., Dolnikowski, R., Russell, R.M. and Grusak, M.A. 2009, 'Golden Rice is an effective source of vitamin A', *The American Journal of Clinical Nutrition*, vol. 89, no. 6, pp. 1776–1783.

Tanner, G.J., Blundell, M.J., Colgrave, M.L. and Howitt, C.A. 2016, 'Creation of the first ultra-low gluten barley (Hordeum vulgare L.) for coeliac and gluten-intolerant populations', *Plant Biotechnology Journal*, vol. 2016, no. 14, pp. 1139–1150.

Tasmanian Government 2013, *Regulatory Impact Statement. Restrictions on the use of sow stalls.*

Tasmanian Irrigation 2015, *2015 Annual Report*, September, Launceston.

Taylor, M., Mitchell, G. and Sward, R. 2013, *Review of the Gene Technology Act 2001 (Queensland)*, Review for the Queensland Department of Science, Information Technology, Innovation and the Arts, November.

Taylor, N. and Signal, T.D. 2009, 'Willingness to Pay: Australian Consumers and "On the Farm" Welfare', *Journal of Applied Animal Welfare Science*, vol. 12, no. 4, pp. 345–359.

TCA (Transport Certification Australia) 2016, *The IAP - how it works*, Factsheet.

TDoJ (Tasmanian Department of Justice) 2015, *New Tasmanian Planning Scheme*, http://www.justice.tas.gov.au/community-consultation/previous_consultations/new-tasmanian-planning-scheme (accessed 10 November 2015).

TDPIPWE (Tasmanian Department of Primary Industries, Parks, Water and Environment) 2010, *Import Risk Analysis*, July, Hobart.

—— 2011, *A Statement of Current Management Practices for Tasmanian Wild Fallow Deer*, February, Hobart.

—— 2013, *Review of the Moratorium on Genetically Modified Organisms (GMOs) in Tasmania — Final Report*.

—— 2014a, *Crow Garlic*, http://dpipwe.tas.gov.au/invasive-species/weeds/weeds-index/weeds-index-declared-weeds/crow-garlic (accessed 29 January 2016).

—— 2014b, *Genetically Modified Organisms Control Act Amendment Bill 2014 — Decision Regulatory Impact Statement (RIS) Summary*.

—— 2014c, *Review of the Primary Industry Activities Protection Act 1995 Issues Paper*, Issues paper, Hobart.

—— 2016a, *Animal Welfare Inspections of Intensive Farms*, Government, Biosecurity Tasmania, http://dpipwe.tas.gov.au/biosecurity/animal-biosecurity/animal-welfare/animal-welfare-inspections-of-intensive-farms (accessed 19 April 2016).

—— 2016b, *Biosecurity Legislation Review*, http://dpipwe.tas.gov.au/biosecurity/about-biosecurity-tasmania/biosecurity-legislation-review (accessed 27 June 2016).

TDSG (Tasmanian Department of State Growth) 2015, *Permanent Native Forest Estate Policy*, http://www.stategrowth.tas.gov.au/forestry/native-forest (accessed 23 February 2016).

TEDO (Tasmanian Environmental Defenders Office) 2014, *Submission to the Review of the Primary Industry Activities Protection Act*, 4 August.

Tegene, A., Huffman, W.E., Rousu, M. and Shogren, J.F. 2003, *The Effects of Information on Consumer Demand for Biotech Foods: Evidence from Experimental Auctions (Technical Bulletin Number 1903)*, United States Department of Agriculture Economic Research Service, Washington DC.

Terrill, M., Emslie, O. and Coates, B. 2016, *Roads to riches: better transport investment*, April, Grattan Institute.

TFGA (Tasmanian Farmers and Graziers Association) 2014, *Submission to competition policy review*, June.

The Register 1909, 'Australian Cattle Stations — Mr. Kidman's Company', Adelaide, 31 March.

Thompson, B. 2015, 'Tony Galati loses Supreme Court bid to grow more potatoes', *The West Australian*, 14 December, https://au.news.yahoo.com/thewest/wa/a/30354387/tony-galati-loses-supreme-court-bid-to-grow-more-potatoes/ (accessed 10 March 2016).

Thompson, M., Lyons, A., Kumarasinghe, L., Peck, D.R., Shattuck, S., La Salle, J. and Kong, G. 2011, 'Remote microscopy: a success story in Australian and New Zealand plant biosecurity', *Australian Journal of Entomology*, vol. 50, pp. 1–6.

Thornber, P., Kelly, D. and Crook, A. 2012, *Animal Welfare Committee Working Group on Australia's Animal Welfare Arrangements and Capacity*, 30 November, Canberra.

Thynne Macartney 2014, 'Australia: Rural leasehold land reforms in Queensland', 15 September, http://www.mondaq.com/australia/x/338576/landlord+tenant+leases/Rural+leasehold+land+reforms+in+Queensland (accessed 11 November 2015).

TIC (Transport and Infrastructure Council) 2014, *Communique*, 7 November.

—— 2015, *Communique*, 6 November, Adelaide.

—— 2016, *Heavy vehicle road reform*, http://transportinfrastructurecouncil.gov.au/publications/heavy_vehicle_road_reform.aspx (accessed 12 April 2016).

Tim Harding and Associates and Rivers Economic Consulting 2014, *Proposed Australian Animal Welfare Standards and Guidelines: Sheep, Decision Regulation Impact Statement. 30 July*, Animal Health Australia.

Tim Harding and Associates and Rivers Economic Consulting 2014, *Proposed Australian Animal Welfare Standards and Guidelines, Cattle. Decision Regulation Impact Statement. Edition One, Version One. 1 May*, Animal Health Australia.

Tim Harding and Associates and Rivers Economic Consulting 2013, *Decision Regulation Impact Statement on a National Scheme for the Assessment, Registration and Control-of-Use of Agricultural and Veterinary Chemicals*.

Transport for NSW 2015, *Review of the NSW Livestock Loading Scheme*, August, Chippendale NSW.

Treasurer 2016, *Australia's Foreign Investment Policy*, 1 July, https://firb.gov.au/resources/policy-documents/ (accessed 12 July 2016).

Treasury 2009, *Australia's Future Tax system Report to the Treasurer, Part Two: Detailed Analysis*, December, Volume 1.

—— 2012, *Establishing a national foreign ownership register for agricultural land*, Consultation Paper, November, Australian Government, Parkes ACT.

—— 2014a, *Budget Paper No. 2: Budget Measures 2014-15*, 13 May.

—— 2014b, *Improving Commercial Relationships in the Food and Grocery Sector*, Consultation Paper, Canberra.

—— 2015a, *Budget Paper No. 2: Budget Measures 2015-16*, 12 May.

—— 2015b, *Free Range Egg Labelling: Consultation Paper*, October, Canberra.

—— 2015c, *Strengthening Australia's Foreign Investment Framework*, Options paper, Australian Government, Canberra.

—— 2015d, *Strengthening Australia's foreign investment framework — Regulation Impact Statement*, 14 September.

—— 2016a, *Budget Paper No. 2: Budget Measures 2016-17*, 3 May.

—— 2016b, *Free Range Egg Labelling: Decision Regulation Impact Statement*, March, Canberra, http://treasury.gov.au/ConsultationsandReviews/Consultations/2015/Free-range-egg-labelling (accessed 1 April 2016).

Trindade, R., Merrett, A. and Smith, R. 2013, 'The grass is always greener? — The effects vs purpose debate resumes', vol. Issue 14.

Truss, W. 2014, *Shipping to cast off red tape and set sail for productivity boost*, 8 April.

Tulloh, C. and Pearce, D. 2011, *Transport Infrastructure for Australia's Agricultural Needs*, November, 11/096, Rural Industries Research and Development Corporation, Canberra.

Turnbull, M. (Prime Minister), Morrison, S. (Treasurer) and O'Dwyer, K. (Minister for Small Business) 2016, *Joint Media Statement: Fixing Competition Policy to Drive Economic Growth and Jobs*, 16 March 2016.

UK DEFRA (UK Department for Environment, Food and Rural Affairs) 2005, *A guide to the practical management of feather pecking and cannibalism in free range laying hens*.

UK Government 2016, *Tax on foreign income*, https://www.gov.uk/tax-foreign-income/residence (accessed 15 June 2016).

UN FAO (Food and Agriculture Organization of the United Nations) 2001, *Guidelines for humane handling, transport and slaughter of livestock*.

United Nations 1992, *Convention on Biological Diversity*, Geneva, Switzerland.

US Food and Drug Administration 2011, *Health Hazard Assessment for Gluten Exposure in Individuals with Celiac Disease: Determination of Tolerable Daily Intake Levels and Levels of Concern for Gluten*, May, Office of Food Safety Center of Food Safety and Applied Nutrition.

—— 2013, 'Food labelling; Gluten-free labelling of foods', *Federal Register*, vol. 78, no. 150, pp. 47154–47179.

—— 2015a, *Consumer Info About Food from Genetically Engineered Plants*, http://www.fda.gov/Food/FoodScienceResearch/GEPlants/ucm461805.htm (accessed 1 July 2016).

—— 2015b, *Gluten and Food Labeling*, http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/Allergens/ucm367654.htm (accessed 8 April 2016).

USDA (United States Department of Agriculture) 2009, *Census of Agriculture — 2007*, United States Department of Agriculture National Agricultural Statistics Service, Washington DC.

—— 2016, *Agricultural Foreign Investment Disclosure Act (AFIDA)*, Washington DC, http://www.fsa.usda.gov/programs-and-services/economic-and-policy-analysis/afida/index (accessed 10 May 2016).

USDT (US Department of the Treasury) 2008, *Office of Investment Security; Guidance Concerning the National Security Review Conducted by the Committee on Foreign Investment in the United States*, 8 December, Vol. 73, No. 236, Federal Register, Washington DC, pp. 74567–74572.

VAGO (Victorian Auditor-General's Office) 2015, *Biosecurity: Livestock*, August, Report 2015-16:4, Melbourne.

Valle, H. and Martin, P. 2015, *Australian sugarcane farm businesses financial performance, 2013–14*, Research report, 15.14, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

Valoral Advisers 2015, *2015 Global Food & Agriculture Investment Outlook: Institutional investors meet farmers*, January, Issue 5, Luxembourg.

VCEC (Victorian Competition and Efficiency Commission) 2015, *Reallocation of reviews functions to Commissioner for Better Regulation*.

VDEDJTR (Victorian Department of Economic Development, Jobs, Transport and Resources) 2015a, *Off-label chemical use in Victoria*, http://agriculture.vic.gov.au/agriculture/farm-management/chemical-use/agricultural-chemical-use/off-label-use/off-label-chemical-use-in-victoria (accessed 12 July 2016).

—— 2015b, *Water Management*, http://agriculture.vic.gov.au/agriculture/farm-management/legal-information-for-victorian-landholders/water-management (accessed 8 March 2016).

—— 2016a, *Food safety for egg producers*, http://agriculture.vic.gov.au/agriculture/livestock/poultry-and-eggs/poultry-legislation-regulations-and-standards/food-safety-for-egg-producers (accessed 5 July 2016).

—— 2016b, *Inquiry into the Labour Hire Industry and Insecure Work*, http://economicdevelopment.vic.gov.au/about-us/strategies-and-initiatives/inquiry-into-the-labour-hire-industry-and-insecure-work (accessed 15 June 2016).

—— 2016c, *MAXimum points for biosecurity software innovation*, http://agriculture.vic.gov.au/about-us/media-centre/media-releases/maximum-points-for-biosecurity-software-innovation (accessed 8 July 2016).

VDELWP (Victorian Department of Environment, Land, Water and Planning) 2015a, *Catchment management authorities*, http://www.delwp.vic.gov.au/water/governing-water-resources/catchment-management-authorities (accessed 18 November 2015).

—— 2015b, *Water Entitlements and Trade*, http://www.depi.vic.gov.au/water/governing-water-resources/water-entitlements-and-trade (accessed 2 November 2015).

—— 2016a, *Protecting Victoria's Environment Biodiversity 2036*, Draft plan, 17 March.

—— 2016b, *Review of the native vegetation clearing regulations - Consultation Paper*.

VDEPI (Victorian Department of Environment and Primary Industries) 2008, *Management of dairy effluent 2008 DairyGains Victorian Guidelines*, Kyabram.

—— 2013, *Permit to remove native vegetation — Risk-based pathways Fact sheet*, December, Melbourne.

—— 2014a, *BushTender*, http://www.depi.vic.gov.au/environment-and-wildlife/environmental-action/innovative-market-approaches/bushtender (accessed 12 April 2016).

—— 2014b, *Changes to the Water Act made by the Governance Act*, http://www.depi.vic.gov.au/water/governing-water-resources/water-entitlements-and-trade/the-water-act/changes-to-the-water-act-made-by-the-governance-act (accessed 29 May 2016).

VDL (Van Diemen's Land Company) 2014, *About Us - Van Diemen's Land Company*, Smithton, Tasmania, http://www.vdlfarms.com.au/about (accessed 18 April 2016).

VDPI (Victorian Department of Primary Industries) 2007, *Review of the Moratorium on Genetically Modified Canola in Victoria*, Melbourne.

VDSE (Victorian Department of Sustainability and Environment) 2007, *Your dam your responsibility — A guide to managing the safety of farm dams*, Irrigation and commercial farm dams - licence to water, Melbourne, p. 90.

—— 2011, *ecoMarkets - Valuing our Environment*, January, Melbourne.

—— 2012, *Crown Land Leasing Guidelines*.

VDTF (Victorian Department of Treasury and Finance) 2016, *Frequently asked questions*, http://www.dtf.vic.gov.au/Infrastructure-Delivery/Leasing-the-Port-of-Melbourne/Frequently-asked-questions (accessed 13 April 2016).

VDTPLI (Victorian Department of Transport, Planning and Local Infrastructure) 2013, *Reformed zones for Victoria: reformed rural zones*, August, Melbourne.

VFF (Victorian Farmers Federation) 2011, *Securing Victoria's Future Prosperity: A Reform Agenda*, December, Melbourne.

——2014a, *Submission to the Agricultural Competitiveness Green Paper*, December, Melbourne.

—— 2014b, *Submission to the Australian Agricultural Competitiveness Issues Paper*, 17 April, Melbourne.

—— 2015, *Submission to the Department of Economic Development, Jobs, Transport and Resources Regional Services Review*, Melbourne.

—— 2016, *Consumers big winners as free range code finally cracked*, http://www.vff.org.au/vff/Media_Centre/Latest_News/Media2016/Consumers_big_winners_free_range_code.aspx?WebsiteKey=62c24c8c-d2bd-4a9d-b3fc-8986271a8595 (accessed 12 April 2016).

VicRoads 2012, *Oversize agricultural vehicles*.

Vinning, G.S. 1980, *Statutory agricultural marketing authorities of Australia : a compendium*, SCA technical report series ; no. 9, Standing Committee on Agriculture, Canberra.

Voiceless 2014, *Submission on the Agricultural Competitiveness Green Paper*, 12 November, Paddington.

Vousden, N. 1990, *The Economics of Trade Protection*, Cambridge University Press, Cambridge, UK.

WA DAF (WA Department of Agriculture and Food) 2011, *An Investigation of Labelling Genetically Modified Food*, Perth, http://www.foodstandards.gov.au/publications/documents/Consumer%20Attitudes%20Survey.pdf (accessed 28 March 2016).

—— 2015, *Animal welfare codes of practice*, https://www.agric.wa.gov.au/animalwelfare/animal-welfare-codes-practice (accessed 16 February 2016).

—— 2016, *Buy West Eat Best*, http://www.buywesteatbest.org.au/buy-west-eat-best#.VtN5oPlPwbk (accessed 28 February 2016).

WA DoH (Western Australia Department of Health) 2012, *Guidelines for Separation of Agricultural and Residential Land Uses: Establishment of Buffer Areas*, August.

WA DoL (Western Australia Department of Lands) 2013, *Department of Lands Submission to the Inquiry into Pastoral Leases in Western Australia*, 27 September, Perth.

—— 2015a, *Annual Report for the Year Ended 30 June 2015*, Western Australia.

—— 2015b, *Unlocking the potential of the Rangelands*, http://www.lands.wa.gov.au/Crown-Land/Rangelands-Reform/Pages/default.aspx (accessed 12 November 2015).

—— nd, *Pastoral leases*, http://www.lands.wa.gov.au/Pastoral-Leases/Pastoral-Purposes-Framework/Pages/default.aspx (accessed 2 August 2016).

WA DRDL (Western Australia Department of Regional Development and Lands) 2011, *Rangeland Tenure Options Discussion Paper*, April.

—— nd, *State Leases*.

WA Farmers (Western Australian Farmers Federation) 2014, *What every farmer needs to know on the Environment Protection and Biodiversity Conservation Act*, http://www.wafarmers.org.au/every-farmer-needs-know-environment-protection-biodiversity-conservation-act/ (accessed 30 September 2015).

WADW (Western Australia Department of Water) 2010, *Water entitlement transactions for Western Australia*, Operational policy 5.13, November, Perth.

—— 2014, *Dam construction and operation in rural areas*, Note, 53, Water quality protection, Perth.

WAERA (Western Australia Economic Regulation Authority) 2015, *Review of the Railways (Access) Code 2000 Final Report*, December, Perth.

Wahlquist, C. 2015, 'Court throws out Perth "potato king" Tony Galati's appeal against injunction', *The Guardian*, 14 December, http://www.theguardian.com/australia-news/2015/dec/14/court-throws-out-perth-potato-king-tony-galatis-appeal-against-injunction (accessed 9 March 2016).

Waite, M., Madge, A., Martin, B. and Mills, J. 1998, *Design Principles for Small Business Programs and Regulations*, Productivity Commission Staff Research Paper, Canberra.

WALAEISC (Western Australia Legislative Assembly Economics and Industry Standing Committee) 2014, *The Management of Western Australia's Freight Rail Network*, October, Report No. 3, Parliament of Western Australia.

WAMR (Western Australia Main Roads) 2015, *'Chain of Responsibility' Legislation Fact Sheet 1 — Overview*, January.

WARSC (Western Australia Road Safety Commission) 2015, *Long vehicle & heavy vehicles legislation change*, https://rsc.wa.gov.au/Road-Rules-Penalties/Law-Changes/Long-Vehicle-Heavy-Vehicles-Legislation-Change (accessed 25 May 2016).

Waterfind 2014, *Submission to the 2014 Review of the Water Act 2007*, Waterfind, Adelaide.

Watson, A. and Parish, R. 1982, 'Marketing agricultural products', in Williams, D. (ed), *Agriculture in the Australian Economy*, Second Edition, Sydney University Press, Sydney, pp. 326–352.

Webster, L. 2016, *Cane farmers want supply agreements to capitalise on high prices*, ABC Rural, http://www.abc.net.au/news/2016-05-18/mackay-cane-growers-push-wilmar-for-contracts/7424868 (accessed 5 July 2016).

Wellard Group Holdings Pty Ltd 2015, *Submission to Treasury's Options Paper — Strengthening Australia Foreign Investment Framework*, 20 March, Fremantle, Western Australia.

West, D. 2015, *Contaminated Non-Genetically Modified Canola — Receival Handling*, Parliamentary Debates (Hansard), 2 December, Thirty-Ninth Parliament, First Session 2015, Legislative Council Western Australia.

Western Australia Public Administration Committee 2014, *Inquiry into Pastoral Leases in Western Australia Report*, 1 April, Report no. 20, Legislative Council.

Western Australian Department of Commerce 2016, *Harmonisation of OHS laws*, http://www.publicsectorsafety.wa.gov.au/occupational-safety-and-health/harmonisation-ohs-laws (accessed 29 April 2016).

Wheen Bee Foundation 2014, *Comments on the Green Paper on Agricultural Competitiveness*, 12 December, Richmond, NSW.

White 2007, 'Regulation of Animal Welfare in Australia and the Emergent Commonwealth: Entrenching the Traditional Approach of the States and Territories or Laying the Ground for Reform', *Federal Law Review*, vol. 35(3).

Whittle, L., Zhang, K., Mazur, K., Skirtun, M., Addai, D., Gray, E.M. and Davidson, A. 2015, *Australia's Cost Recovery Arrangements for Export Certification: Implications for Australian Agriculture*, October, 15.8, ABARES research report, Canberra.

WHO (World Health Organization) 2005, *International Health Regulations*, Geneva, Switzerland.

—— 2016, *Frequently Asked Questions on Genetically Modified Foods*, http://www.who.int/foodsafety/areas_work/food-technology/faq-genetically-modified-food/en/ (accessed 19 February 2016).

—— and FAO (Food and Agriculture Organization of the United Nations) 2016, *About Codex*, http://www.fao.org/fao-who-codexalimentarius/about-codex/en/ (accessed 17 June 2016).

Williamson, A., Bohle, P., Quinlan, M. and Kennedy, D. 2009, 'Short Trips and Long Days: Safety and Health In Short-Haul Trucking', vol. 62, no. 3, pp. 415–429.

Winston, C. and Mannering, F. 2014, 'Implementing technology to improve public highway performance: a leapfrog technology from the private sector is going to be necessary', *Economics of Transportation*, vol. 3, no. 2, pp. 158–165.

Wonder, B., Beynon, N. and Hunt, L. 1995, *Australia's approach to agricultural reform*, Paper delivered in Washington D.C., 13 March 1995, Department of Primary Industries and Energy, Canberra.

Work Safe Victoria 2016a, *National harmonisation of work health and safety laws*, http://www.worksafe.vic.gov.au/laws-and-regulations/occupational-health-and-safety/national-work-health-and-safety-reform (accessed 29 April 2016).

—— 2016b, *OHS Regulations Reform*, http://www.worksafe.vic.gov.au/laws-and-regulations/occupational-health-and-safety/regulation-overviews (accessed 15 June 2016).

World Animal Protection 2016, *Advance Australian animal welfare: The urgent need to re-establish national frameworks*, http://www.worldanimalprotection.org.au/news/our-new-report-calls-leadership-animal-welfare-through-and-independent-office (accessed 15 June 2016).

World Bank Group 2016, *Enabling the Business of Agriculture 2016: Comparing Regulatory Good Practices*, 28 January, World Bank, Washington DC.

WRMC (Workplace Relations Ministers' Council) 2009, *WRMC Response to recommendations of the national review into model OHS laws*, May.

WTO (World Trade Organization) 2014, *Technical Barriers to Trade*, Geneva, https://www.wto.org/english/res_e/publications_e/tbttotrade_e.htm (accessed 30 March 2016).

—— 2015, *The WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement)*, Geneva.

—— 2016, *Disputes by agreement*, https://www.wto.org/english/tratop_e/dispu_e/dispu_agreements_index_e.htm?id=A19 (accessed 20 April 2016).

Wylie, P. 2008, *Managing sorghum for high yields — A blueprint for doubling sorghum production*, March, Grains Research and Development Corporation, Kingston ACT.