

The Senate

Education, Employment
and Workplace Relations
References Committee

Higher education and skills training to support
agriculture and agribusiness in Australia

June 2012

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RECOMMENDATIONS

Recommendation 1

3.19 The committee recommends that the Australian Council of Deans of Agriculture considers working with the Australian Council of Deans of Education to strengthen engagement between agriculture and education faculties during teacher education programs.

Recommendation 2

3.25 The committee recommends that the Government continues to provide financial support for the promotion of agriculture in primary and secondary schools, such as the work undertaken by the Primary Industry Centre for Science Education and the Primary Industries Education Foundation.

Recommendation 3

3.48 The committee recommends that the Department of Innovation, Industry, Science, Research and Tertiary Education reviews the impediments to seamless national delivery of agriculture and agribusiness education in the Vocational Education and Training sector.

Recommendation 4

3.49 The committee recommends that the Department of Innovation, Industry, Science, Research and Tertiary Education consult with state and territory agencies and relevant industry bodies to determine the most appropriate delivery model for Vocational Education and Training in the agricultural and agribusiness sector with a view to ensuring adequate funding which will deliver the most effective training outcomes for employees and employers alike.

Recommendation 5

3.64 The committee recommends that the government explores options for the Regional Higher Education, Skills and Jobs Coordinators to work with organisations such as the Primary Industries Education Foundation to raise the profile of agriculture in schools.

Recommendation 6

3.102 The committee recommends that the Australian Council of Deans of Agriculture work with member universities to develop a collaboration framework to optimise research investment and improve knowledge transfer in agriculture and agribusiness research.

Recommendation 7

3.114 The committee recommends that the government commissions a study inquiring into the most appropriate higher education framework to support high-level, practically-focused agribusiness education with a view to implementing the national food plan. The review should consider governance and funding arrangements (recognising the significant costs of delivering agricultural and farm studies), the effectiveness of regional campuses, needs of industry and students, and pathways between VET and higher education.

Recommendation 8

3.130 The committee recommends that the Australian Bureau of Agricultural and Resource Economics and Sciences undertakes an analysis of the decline of Extension services and the impact of this on the dissemination of research outcomes through productivity improvement to agriculture and agribusiness.

Recommendation 9

4.29 The committee recommends that the government facilitates the development of a national peak industry representative body for the agricultural production and agribusiness sectors.

Recommendation 10

4.30 The committee recommends that the government commits to regular consultation with the new peak body established in recommendation 9 regarding policy changes that impact upon agriculture and agribusiness.

Recommendation 11

4.31 The committee recommends that the new industry peak body develops and presents to government a national strategy for addressing the skills shortage, industry productivity, and food security.

CHAPTER 1

Introduction

Terms of reference

1.1 On 19 September 2011 the Senate referred the following matters to the Senate Education, Employment and Workplace Relations References Committee for inquiry and report by 1 March 2012:

All aspects of higher education and skills training to support future demand in agriculture and agribusiness in Australia be examined, including:

- (a) the adequacy and priority given to funding in the agriculture and agribusiness higher education and vocational education and training (VET) sectors by federal, state and territory governments;
- (b) the significant decline in agricultural and related educational facilities in the past decade, including reasons and impacts;
- (c) solutions to address the widening gap between demand and supply for higher education and VET sector graduates in agriculture and agribusiness in Australia;
- (d) the impact of this shortage in terms of agriculture research, including research into climate change adaptation and sustainable agricultural techniques, bio-security and food security;
- (e) the economic impact on Australia's terms of trade and reputation as a trusted supplier of high quality foodstuffs to world markets;
- (f) ways to further incorporate animal welfare principles in agriculture courses; and
- (g) any related matters.¹

1.2 On 27 February 2012 the Senate extended the reporting date until 8 June 2012. On 8 June 2012 the committee tabled an interim report in the Senate. This is the committee's final report.

Conduct of the inquiry

1.3 Notice of the inquiry was posted on the committee's website and advertised in *The Australian* newspaper, calling for submissions by 8 November 2011. The committee also directly contacted a number of interested parties to notify them of the inquiry and to invite submissions. The committee has received a total of 69 public submissions as listed at Appendix 1. Appendix 1 also includes information of answers to questions on notice and documents tabled by the committee.

1 *Journals of the Senate*, No. 53, 19 September 2011, pp 1502–3.

1.4 The committee conducted a public hearings in Canberra on 1 February 2012, Perth on 26 March 2012 and Melbourne on 15 May 2012. Witnesses who appeared before the committee are listed at Appendix 2.

1.5 Copies of the Hansard transcript from the hearing are tabled for the information of the Senate. They can be accessed online at <http://aph.gov.au/hansard>.

Structure of this report

1.6 The committee's report is structured in the following way:

- (a) Chapter 1 (this chapter) outlines the conduct of the inquiry;
- (b) Chapter 2 discusses the demand for skills in agriculture and agribusiness;
- (c) Chapter 3 considers key issues in the education system, as relevant to agribusiness and agriculture; and
- (d) Chapter 4 concludes the report with key recommendations.

Note on references

1.7 Submission references in this report are to individual submissions as received by the committee, not a bound volume. References in this report are to the proof Hansard. Please note that page numbers may vary between the proof and the official transcripts.

Acknowledgements

1.8 The committee would like to thank the large number of individuals and organisations who took the time to make submissions that helped shape the committee's deliberations.

CHAPTER 2

The demand for skills in agribusiness and agriculture in Australia

2.1 Agriculture and agribusiness are key employers and export earners for the Australian economy. In 2009–10, the gross value of agriculture, forestry and fisheries was \$43.6 billion, or three per cent of Gross Domestic Product (GDP).¹ The agriculture sector also has impacts beyond the value of its production through its support of the wider food supply chain. This includes food and beverage processing, manufacturing, distribution, wholesaling, retailing, food services and trade. The turnover of food and beverage processing alone is in excess of \$70 billion per year.² Clearly, agriculture and agribusiness³ are key components of the Australian economy. Despite this, a critical skills shortage has developed which threatens the ability of the agricultural sector to continue to grow and meet increasing global demand for food and fibre.

Employment in agriculture and agribusiness

2.2 Agriculture and Agribusiness are major employers in Australia, in rural, regional and metropolitan areas. Three per cent of the Australian workforce (approximately 327 000) is directly involved in the agriculture, forestry and fishing industries.⁴ However, agribusiness extends far beyond primary production and it is estimated that once ancillary employment in fields such as warehousing and manufacturing are considered, up to one-in-six Australian jobs (around 1.6 million) depend on agricultural production.⁵ Between 2001 and 2011 however, employment in agriculture declined by 27 per cent as 119 300 jobs disappeared through drought and other hindrances on industry.⁶ As agribusiness expands and the primary production sector recovers from the prolonged drought, the Department of Education, Employment and Workplace Relations (DEEWR) forecasts employment growth in agriculture at a rate of 1.5 per cent per annum.⁷

1 Department of Agriculture, Fisheries and Forestry, *Submission 57*, p. 1.

2 Department of Agriculture, Fisheries and Forestry, *Submission 57*, p. 1.

3 Within the report, the terms 'agriculture' and 'agribusiness' may be used interchangeably.

4 Skills Australia, *Submission 63*, p. 4.

5 Grain Producers Australia, *Submission 44*, p. 4.

6 Department of Agriculture, Fisheries and Forestry, *Submission 57*, p. 1.

7 Department of Agriculture, Fisheries and Forestry, *Submission 57*, p. 1.

2.3 The agricultural and agribusiness workforces are extremely diverse and fragmented. This is because of the expansive value-chain and the large number of small enterprises that constitute the sector. Geographically, agribusiness has a presence in all major cities and constitutes a large part of the economy in regional, rural and remote areas.⁸ Agricultural enterprises and agribusinesses require all manner of workers ranging from unskilled labour through to highly-qualified and experienced academic researchers. Furthermore, this spread of employees is split into all manner of specialised fields that go beyond traditional 'agricultural' professions and encompass advertising, marketing, product development, economics, law, biotechnology, and mechanisation among others.

2.4 In spite of the increasingly complex and demanding value-chain structures that characterise the industry, of all economic sectors, it has the lowest number of workers with post-secondary qualifications.⁹ In 2009 only around 7.8 per cent of the agricultural industry had tertiary qualifications compared with 25 per cent for the wider community.¹⁰ The employment of apprentices in the Agriculture, Forestry and Fishing industries is also lower than other industries.¹¹ Skills Australia argued that this is partly a reflection of the higher age-profile of the sector compared to others, but is also likely to be an indication of industry's preference for 'on the job' skills development and traineeships instead of formal 'apprenticeship style' education arrangements.

2.5 The committee heard that for a long time human capital has been regarded by industry as a non-strategic cost rather than an asset, and that overall, education and training are misunderstood and undervalued.¹² The way in which training is viewed by industry has a critical impact on the shape of the workforce. The Tasmanian Farmers and Graziers Association – the peak body representing farmers and agriculture more broadly across Tasmania – argued that the agribusiness sector has traditionally been very poor in promoting training and education in the existing workforce.¹³ It was argued by Skills Tasmania that the low perceived value of training in agricultural production and agribusinesses generally contributes to the low use of formal training mechanisms. Some education providers also indicated that industry has provided minimal, or at least haphazard, support for agricultural skills development and higher education.¹⁴

8 Skills Australia, *Submission 63*, p. 5.

9 Skills Australia, *Submission 63*, p. 6.

10 Professor Jim Pratley, Australian Council of Deans of Agriculture, *Committee Hansard*, 26 March 2012, p. 41.

11 Skills Australia, *Submission 63*, p. 6.

12 SOS Group and the University of Adelaide, *Submission 59*, p. 4; Mr Wayne Cornish, Rural Skills Australia, *Committee Hansard*, 1 February 2012, p. 11; Mr Pete Mailler, Grain Producers Australia, *Committee Hansard*, 1 February 2012, p. 25.

13 Tasmanian Farmers and Graziers Association, *Submission 30*, p. 5.

14 Tocal College, *Submission 6*, p. 2; cf. Department of Primary Industries, *Submission 28*, p. 2.

2.6 The Australian Council of Deans of Agriculture (ACDA) – a council comprised of universities in Australia that offer a degree course in agriculture – summarises the current educational situation facing the agricultural and agribusiness workforce:

[P]rofessional education in agriculture has not been a priority for the industry over many decades. As a consequence the industry has fallen well behind the community at large, and international competitors, in levels of education...[H]owever the complexity of modern day living, the high tech nature of modern agriculture, the high levels of compliance, the complexities of business and marketing produce, high expectations and environmental management...make the case very much stronger for higher levels of education and training than has hitherto been necessary.¹⁵

2.7 Despite low levels of formal qualifications, 62 per cent of the agribusiness workforce is classified as managers or professionals.¹⁶ Recent research conducted by Marcus Oldham College provides some insight into the importance of education to successful agribusinesses. Successful farmers conceptualise themselves as business people with technical knowledge of their particular field. Knowledge of business structures, finance, and strategic planning were listed as valued knowledge by successful farmers, and it was their business knowledge that defined their success.¹⁷ In today's world, these skills are developed through a combination of experience and formal learning.

2.8 The committee heard that capacity for innovation is largely determined by workers' characteristics such as education, business acumen, financial resources, skilled labour and access to public and private extension services.¹⁸ Therefore, it stands to reason that the more educated the sector's workforce, the more successful and innovative it will become.¹⁹

Skills shortage

2.9 It is now widely recognised that there is a skills shortage in Australia. A skills shortage occurs when the demand for a particular occupation is greater than the supply of workers who are qualified, available and willing to work under existing market conditions. Skills shortages may be confined to a particular geographic area, and may coexist with high levels of unemployment. Generally, shortages are more likely to occur in fields which require significant periods of training and experience.²⁰

15 Australian Council of Deans of Agriculture, *Submission 36*, pp [4–5].

16 Department of Agriculture, Fisheries and Forestry, *Submission 57*, p. 2.

17 Marcus Oldham College, *Submission 5*, p. 3.

18 Department of Agriculture, Fisheries and Forestry, *Submission 57*, p. 4.

19 Agribusiness Council of Australia, *Submission 13*, p. 3.

20 Agriplacements Australia, *Submission 1*, p. 6.

2.10 Skills shortages are difficult to quantify across sectors as diverse and fragmented as agriculture and agribusiness. It is evident that different components of the sector are facing different shortages to different degrees. Skills Tasmania reported that larger corporatized farms are in need of management and strategic skills; horticulture is lacking seasonal harvesting labour; and the viticulture industry is searching for additional allied business skills such as marketing.²¹ Different locales also face different labour markets. In Queensland and Western Australia where the impacts of the mining boom are especially pronounced, farmers and agribusinesses report significant trouble recruiting and retaining staff. Mining typically pays significantly higher wages than agriculture.²²

2.11 Despite the difficulties in identifying every shortage, it is clear that many sectors of the industry are facing severe shortages. Grain Producers Australia (GPA) – the national representative body for the grains industry – relates that in the area of agronomy there are around 10 jobs for every graduate.²³ Elders – a 172 year-old national agribusiness company – provided the committee with some telling statistics regarding the skills shortage, especially of agricultural scientists:

In the agricultural sector, there is an ongoing labour market shortage in the field of agricultural science. In 2010, only 40% of advertised positions were filled and there were 1.1 applicants for each job. This is down from 65% filled vacancies and 1.4 applicants per job in 2009.²⁴

2.12 Similarly, Agriplacements Australia – a business dedicated to sourcing people for agribusiness, bioscience and agricultural industries – related that many employers are reporting increased difficulties in securing staff.²⁵ The committee heard that some jobs advertised in isolated areas received no response whatsoever from prospective workers.²⁶ Agriculture and agribusiness education institutes have been receiving calls from businesses trying to recruit current students.²⁷ The Rice Growers' Association of Australia (RGA) – whose members have reported difficulties recruiting 'across all levels of skill' – argued that the true extent of the skills shortage has been masked by the recent prolonged drought and is only now becoming fully apparent as agricultural enterprises have moved back to full production.²⁸

21 Tasmanian Government, *Submission 42*, p. 2.

22 West Australian Farmers' Federation, *Submission 9*, p. [3]; Australian Bureau of Statistics, *6302.0 – Average Weekly Earnings, table 10A*, November 2011.

23 Grain Producers Australia, *Submission 44*, p. 4.

24 Elders Limited, *Submission 55*, p. 2.

25 Agriplacements Australia, *Submission 1*, p. 5.

26 Ms Barbara Grey, *Submission 61*, p. [3].

27 Mr John Goldsmith, Longerenong College, *Committee Hansard*, 15 May 2012, p. 29.

28 Ricegrowers' Association of Australia and Ricegrowers' Limited, *Submission 58*, p. [3].

2.13 One causal factor of the skills shortage is that tertiary completions have fallen far behind industry demand. It was reported to the committee by the University of Western Australia (UWA) that, due to a shortage of students, the university has struggled to maintain a cohort commensurate with industry and research needs.²⁹ According to ACDA:

There has been a continual decline in graduate completions in university agriculture and related degrees for the last two decades (currently <300 in agriculture and <700 in agriculture and related courses) whereas the job market for graduates, as evidenced by job advertisements, indicates that there have been in excess of 4000 positions per year consistently over the past four years.³⁰

2.14 The committee was cautioned by ACDA that the decline in graduate numbers has implications for the productivity of the industry, and the sustainability of agricultural research and education.³¹ Due to the difficulty in attracting degree qualified candidates for jobs, many organisations are now employing diploma-level graduates to undertake work previously completed by university graduates. The committee heard that there is some concern regarding the ongoing viability of this practice.

2.15 As well as the on-going shortage of agricultural matriculations, the committee heard concerns that existing courses do not adequately prepare those students who do graduate for the workforce, thereby necessitating further training before they can be effectively used by industry.³² The content of agribusiness education is discussed in the following chapter.

2.16 It was put to the committee that the most effective way to address the skills shortage in the short- to medium-term is by 'up-skilling' existing employees in agriculture and agribusiness.³³ Another option is to enhance the training of young workers in rural locations as the most efficient students in agriculture and agribusiness tend to come from those areas.³⁴

29 The University of Western Australia, *Submission 16*, p. 2.

30 Australian Council of Deans of Agriculture, *Submission 36*, p. [1]. For information on the methodology used by the Australian Council of Deans of Agriculture to reach these figures see: Professor Jim Pratley, Australian Council of Deans of Agriculture, *Committee Hansard*, 26 March 2012, p. 41.

31 Australian Council of Deans of Agriculture, *Submission 36*, p. [1].

32 Birchip Cropping Group, *Submission 62*, p. [3]; Mr Bruce Hutchinson, *Committee Hansard*, 26 March 2012, p. 10.

33 SOS Group and the University of Adelaide, *Submission 59*, p. 3.

34 Professor Lindsay Falvey, *Submission 29*, pp 9–10.

The imperative of addressing the skills shortage

2.17 Skills shortages impact upon the entire supply chain. Although food security has not been a prominent topic in Australia in recent times, this is changing. On 27 October 2011 the Minister for Agriculture, Fisheries and Forestry announced further details regarding the development of Australia's first National Food Plan (Plan).³⁵ The Minister listed the objectives of the Plan, among others, as:

- Contributing to global food security;
- Reducing barriers to a safe and nutritious food supply that responds to the evolving preferences and needs of all Australians and supports population health;
- Supporting the long-term economic, environmental and social sustainability of Australia's food supply chain; and
- Supporting the global competitiveness and productivity growth of the food supply chain, including through research, science and innovation.³⁶

2.18 The challenges in feeding a growing population require a productive and versatile industry.³⁷ Skills Australia reported to the committee that a lack of appropriate skills could impact agricultural production or put upward pressures on prices which have a flow-on effect across the economy and Australia's trade partners.³⁸

2.19 Relatively low levels of formal qualifications suggest that the existing workforce may not have the right skill set to fully adapt to the future challenges facing the industry.³⁹ Some skills shortages present significant medium-term threats. Skills Australia maintains a list of occupations in shortage which if not addressed could have significant economic impacts on industry. That list currently includes such professions such as forestry scientists, land economists, and cartographers; all clearly related to agriculture and agribusiness.⁴⁰

2.20 As well as representing a medium- to long-term threat to agricultural production, skills shortages also present a more immediate concern. The RGA reported that vital machinery is sometimes left idle for days or weeks because there are no qualified mechanics available to repair it when breakdowns occur.⁴¹ The

35 Senator the Hon. Joe Ludwig, Minister for Agriculture, Fisheries and Forestry, 'Next steps for Australia's first National Food Plan, media release DAFF11/246L, 27 October 2011.

36 Senator the Hon. Joe Ludwig, Minister for Agriculture, Fisheries and Forestry, 'Next steps for Australia's first National Food Plan, media release DAFF11/246L, 27 October 2011.

37 Professor Lindsay Falvey, *Submission 29*, p. 9; Mr Graeme Batten, *Submission 38*, p. 1.

38 Skills Australia, *Submission 63*, p. 3.

39 Department of Agriculture, Fisheries and Forestry, *Submission 57*, p. 3.

40 Skills Australia, *Submission 63*, p. 12.

41 Ricegrowers' Association of Australia and Ricegrowers' Limited, *Submission 58*, p. [3].

committee heard that, should there be a bumper harvest in the near future on the East coast of Australia, industry will suffer 'massive crop losses' because of a shortage of labour and machinery.⁴² Furthermore, the shortage of labour has meant that the existing workforce is required to work excessive hours to compensate, thereby creating additional workplace health and safety hazards. SunRice – one of Australia's largest branded processed food exporters and household name – reported to the committee that:

As a consequence of these acute labour shortages, SunRice relies on additional shifts and extended work hours to overcome the skills shortage. For these shortages to not cripple our operation, we depend on the good will of employees and their families to cover the requisite additional shifts and extended hours of work. The remuneration requirements for additional shifts and overtime, which are prohibitively expensive, mean they can only be economically viable as a last resort to satisfy customer orders and other business objectives.

2.21 The skills shortage also limits industries' ability to take advantage of opportunities that present themselves, and also constrains the growth Australia's export earnings. As explained by Queensland cotton farmer Ms Barbara Grey:

We are often not in the position to grow opportunity crops when seasonal conditions allow, owing to the shortage of skilled and semi-skilled workers. In our business, it is one thing to make an investment plan around your machinery, but another to make such a plan around your labour. It is increasingly difficult to attract capable staff to rural [and] regional areas.⁴³

2.22 The committee received conflicting evidence on whether the current skills shortage will be resolved through market forces alone. Skills Australia anticipates that many current skills shortages will be resolved this way.⁴⁴ Although DEEWR is predicting employment growth in agribusiness over the coming years, this is unlikely to fully address the shortage. As Skills Tasmania explains, growth begets growth:

Growth in the Tasmanian agribusiness sector will lead to increased demand for skilled labour throughout the value chain. There is likely to be increased demand not only for entry level workers, but also for highly skilled staff in areas such as research and development, agronomy, laboratory technicians, food safety, food processing, marketing and business and personnel management.⁴⁵

42 Mr Pete Mailler, Grain Producers Australia, *Committee Hansard*, 1 February 2012, p. 28.

43 Ms Barbara Grey, *Submission 61*, p. [4].

44 Skills Australia, *Submission 63*, p. 12.

45 Tasmanian Government, *Submission 42*, p. 4.

Productivity

2.23 The issue of agricultural productivity was raised by a number of stakeholders during the course of this inquiry.⁴⁶ Productivity growth means that resources – such as labour, capital and land – are being used more effectively and efficiently.⁴⁷ Improved productivity bestows significant economic advantage for businesses and the nation as a whole. The benefits of increased productivity are clear, over the last three decades, productivity growth in the agricultural sector has returned an estimated productivity dividend in excess of \$170 billion.⁴⁸

2.24 The committee heard estimates that productivity in agriculture has to increase by anywhere from 1–5 per cent per annum to remain competitive in both domestic and international markets, and to maintain levels of return for Australians in the sector.⁴⁹

2.25 In terms of multifactor productivity – a measure that considers both labour and capital inputs – (MFP) growth in agriculture, Australia has performed relatively strongly over the last two decades compared to its international competitors, but has recorded lower productivity increases than countries such as Canada and Denmark.⁵⁰ Despite showing overall growth, advances in productivity in agriculture have not been evenly spread: at the same time as the cropping industry has shown strong gains, sheep and beef farms have been going backwards in real terms.⁵¹

2.26 For some time productivity gains in agriculture were double the national average. Between 1974–75 and 2003–4, MFP in the agriculture sector averaged around 2.3 compared to the national trend of one per cent.⁵² In recent times the increase in agricultural productivity has levelled off.⁵³ Statistics from the Australian Bureau of Statistics indicated that since 2003–04 productivity in the agriculture, forestry and fishing industries has increased by less than three per cent over six years.⁵⁴

46 Although the matter of productivity was raised in relation to agriculture and agribusiness, this section principally draws on empirical evidence regarding agriculture. Because agribusiness is comprised of multiple sectors, it is not possible for the committee to draw specific conclusions regarding agribusiness productivity.

47 Productivity Commission, *Trends in Australian Agriculture*, 2005, p. 117.

48 Productivity Commission, *Trends in Australian Agriculture*, 2005, p. 115.

49 Birchip Cropping Group, *Submission 62*, p. [1]

50 Productivity Commission, *Trends in Australian Agriculture*, 2005, p. 115.

51 Productivity Commission, *Trends in Australian Agriculture*, 2005, p. 115.

52 Productivity Commission, *Trends in Australian Agriculture*, 2005, p. 119.

53 Professor Jim Pratley, Australian Council of Deans of Agriculture, *Committee Hansard*, 26 March 2012, p. 41.

54 Australian Bureau of Statistics, *Experimental Estimates of Industry Multifactor Productivity, Australia: Detailed Productivity Estimates Table 15*, 5260.0.55.002, 7 December 2011.

2.27 Research and development has long been the cornerstone of increasing productivity across the food chain, and the committee heard that declining research and education funding was a significant threat to future gains. The Grains Research and Development Corporation (GRDC) put it to the committee that there exists a direct link between the decline in productivity growth and declining research funding.⁵⁵ Statistics from the dairy industry indicate that productivity growth has slowed at the same time as research funding has levelled-off from the late 1990s onward.⁵⁶

2.28 The committee also heard that a strong link also exists between productivity and an adequate supply of labour.⁵⁷ People who are better educated, with increased competencies in relevant fields produce more from less and find opportunities amid complexity.⁵⁸ One study revealed that supplying a sufficient quantity of skilled workers to a region can increase productivity in that area by 3.2 per cent.⁵⁹ Testimony received from the National Farmers' Federation (NFF) argued a similar point:

Securing an adequate supply of suitably skilled labour is vital in optimising Australia's agricultural productivity. Improving the skill level of the agricultural workforce is essential to enhancing innovation, strengthening competitiveness, boosting resilience and developing a large capacity for the industry to capitalise on opportunities and contribute to global food security.⁶⁰

2.29 The Productivity Commission supported the premise that the labour supply impacts upon productivity, arguing that: 'the educational attainment of agricultural workers has increased in recent decades, which suggests an increase in the quality per hour worked.'⁶¹ Unfortunately, at present, the opposite trend is evident in the food sector as industry employs people with lower level qualifications to complete higher level work because of the skills shortage.⁶²

Committee view

2.30 The committee is of the opinion that there is a significant skills shortage in both agricultural production and agribusiness in Australia, and that this skills shortage is not going to resolve itself through market forces. This will be exacerbated by the

55 Grains Research and Development Corporation, *Submission 43*, p. 2.

56 Dairy Industry People Development Council, answer to question on notice, 15 May 2012 (received 16 June 2012).

57 The Hon. Dr Hendy Cowan, *Committee Hansard*, 26 March 2012, p. 6.

58 Dairy Industry People Development Council, *Submission 54*, p. 9.

59 Mr Arthur Blewitt, AgriFood Skills Australia, *Committee Hansard*, 1 February 2012, p. 8.

60 Mr Matt Linnegar, National Farmers Federation, *Committee Hansard*, 1 February 2012, p. 18.

61 Productivity Commission, *Trends in Australian Agriculture*, 2005, p. 123.

62 Mr Pete Mailler, Grain Producers Australia, *Committee Hansard*, 1 February 2012, pp 25–26.

ageing of the workforce in the medium-term, and competition for labour from the mining sector for the foreseeable future. The skills shortage also poses a threat to the productivity increases that are necessary for the continued viability of the food sector. Therefore, the committee considers that steps must be taken to alleviate the skills shortage, and protect productivity growth. Industry and education bodies, working with government, will need to undertake concerted efforts to address the skills shortage to ensure that there are sufficient human resources to meet the needs of a growing sector. It is to this subject that the report now turns.

Chapter 3

Key issues in agriculture and agribusiness education

3.1 This chapter considers the key issues explored by the committee in agribusiness education. Topics covered include the:

- Delivery and content of agricultural and agribusiness education;
- Attraction of students at the secondary and tertiary levels;
- Costs of agricultural education for students and education providers; and
- Role and importance of research in agriculture.

Content

3.2 The committee received a diversity of views regarding the content and skills that should be included in agricultural education. The committee received evidence illuminating the tension between, on the one hand, industry's wish for vocationally orientated graduates, and the universities' emphasis on high-level academic skills, on the other.

3.3 It was put to the committee that it was necessary for courses to provide a combination of knowledge from both technical and business fields.¹ While universities enjoy considerable freedom to design their own courses, at the Vocational Education and Training (VET) level, courses adhere to a relevant National Training Package (NTP). As explained by the *Training Packages Development Handbook*:

Training Packages specify the skills and knowledge required to perform effectively in the workplace...The development and endorsement process for Training Packages ensures the specifications are developed to an agreed quality standard and are highly responsive to industry's existing and future demand for new skills.²

3.4 The committee heard some criticisms of the content of the NTPs including that the size of the curricula makes it difficult to fully understand them.³ Furthermore, some included subjects such as 'Interpersonal Communication' and 'Quality Assurance' were argued to be extraneous and served to crowd-out fundamental competencies in areas such as biology and business.⁴

1 Marcus Oldham College, *Submission 5*, p. 4.

2 Department of Education, Employment and Workplace Relations, *Training Package Development Handbook*, available from: <http://www.deewr.gov.au/Skills/Overview/Policy/TPDH/Trainingpackages/Pages/Overview.aspx>, accessed: 23/04/2012.

3 Mr Ian Joseph, Agribusiness Council of Australia, *Committee Hansard*, 15 May 2012, p. 5.

4 Mr Joe Garnham, *Submission 65*, p. 3.

3.5 Many education providers emphasised the importance of endowing students with a diverse skill set that allows them to acquire more vocational skills following graduation. Representatives from UWA emphasised that agriculture courses needed to teach students more than just how to do a job. The committee heard about the qualities a student from UWA possesses:

Our students come out with their degree with a critical mind. They have embedded generic skills within their degree and they have a clear focus on the important issues in agriculture and how to address them.⁵

3.6 The Northern Melbourne Institute of TAFE (NMIT) similarly argued that it was the job of tertiary institutions to teach students high-level analytical skills so they can pursue any number of careers:

There are a number of degrees—you can take law or medicine—and they have extra training on the job or whatever it is. Agriculture is no different to that. Are they going to be work ready for the wide range of organisations? It is pie in the sky, really. We have got to teach them how to think in an agricultural context so when they go on to a farm or into an agribusiness or wherever it is they can work out the problems and be developed into the sort of employee that Elders or Rural Finance might want or NAB bank might want.⁶

3.7 On the other hand, industry tended to argue that universities and other training institutes needed to create work ready graduates. The committee heard that at present, many tertiary institutions are producing graduates with strong theoretical knowledge, but lacking in practical know-how which industry considers essential.⁷ The Dairy Industry People Development Council (DIPDC) reported a common comment they received when consulting with their constituents: 'There is no point giving a person a Diploma of Agriculture, and expecting industry to value the qualification if they cannot milk the cows.'⁸ The importance of hands-on experience was cited as essential to ensuring that agriculture and agribusiness graduates (be it of VET or tertiary facilities) were equipped to launch their careers. The committee received evidence that the misalignment between what is taught and what industry requires may result in scepticism towards the value of education in general.

3.8 The Australian Beef Industry Foundation (ABIF) noted that unless a student is from a rural background, it is possible for them to complete some agricultural courses without actually acquiring practical experience in the sector.⁹ The on-going success of

5 Professor Lynette Abbott, Faculty of Natural and Agricultural Sciences, the University of Western Australia, *Committee Hansard*, 26 March 2012, p. 58.

6 Mr Gavin Drew, Northern Melbourne Institute of TAFE, *Committee Hansard*, 15 May 2012, p. 36.

7 Mr Alan Fisher, Farm Machinery Dealers Association of Western Australia, *Committee Hansard*, 26 March 2012, p. 23.

8 Dairy Industry People Development Council, *Submission 54*, p. 18.

9 Australian Beef Industry Foundation, *Submission 56*, p. [3].

Marcus Oldham College was cited as testament to the value that industry, and importantly students, place on a practical approach to education and training.¹⁰

3.9 Education providers and industry need to work together to strike a balance between graduates being work-ready and possessing a broad education. The committee heard of a number of positive examples whereby employers were working with education institutes to provide hands-on training and career pathways to students to complement students' theoretical learning. For example, Landmark reports that it has:

[P]artnered with one of the largest agricultural universities in Australia and offered 'scholarships' to carefully selected third year students who then undertake a block assignment with Landmark as well as casual work over the year as part of their degree. They are then taken into the graduate program the following year.¹¹

3.10 The committee also received evidence from Skills Tasmania indicating the dairy industry in Tasmania had developed strong links with local Registered Training Organisations (RTO) that had both increased the number of enrolments and also helped the industry meet its own skills needs.¹² These examples suggest to the committee that the most effective training is provided through partnerships between industry and training institutions.

School age education

3.11 The committee heard compelling evidence of the importance of introducing students to agricultural education from an early age. Around 40 per cent of children are thought to determine their preferred careers while still in primary school.¹³ What is included in the curriculum and the manner in which it is taught impact upon the efficacy of agricultural education in schools. Students interested in agriculture can undertake VET subjects in secondary school – which introduce them to some of the more practical elements – as well as choose subjects such as maths and sciences which will enable them to study agriculture and agribusiness related fields at university.

3.12 The committee received some evidence suggesting agricultural literacy in schools is very low. A recent Australian Council for Educational Research survey revealed that nearly half of year 10 students (usually around 16 years of age) believed cotton socks were an animal product, and that 10 per cent of first-year undergraduate students at the University of Sydney believed that beef counted towards their vegetable intake.¹⁴ It was put to the committee that it was necessary to increase the

10 Australian Beef Industry Foundation, *Submission 56*, p. [3].

11 Landmark Operations Limited, *Submission 27*, p. [1].

12 Tasmanian Government, *Submission 42*, p. 7.

13 Mr Ben Stockwin, Primary Industries Education Foundation, *Committee Hansard*, 1 February 2012, p. 39.

14 Mr Ben Stockwin, Primary Industries Education Foundation, *Committee Hansard*, 1 February 2012, p. 39.

level of agricultural literacy in the population in general, and that doing so would have the added benefit of attracting more students to the field.¹⁵ One frequently recommended means of raising the profile of agriculture in schools was the inclusion of relevant material in the national curriculum.¹⁶ This would not necessarily need to be a stand-alone subject: agriculture can be successfully integrated into the study of other areas.¹⁷ For example, agricultural case studies in business classes, animal welfare in philosophy classes, and soil sciences in biology or chemistry would introduce student to agricultural issues. It was posited by ACDA that:

[T]he national curriculum should include food and fibre production in its cross-curriculum perspective, so that in all the subjects that students do food and fibre production is used as part of the general education in those curricula.¹⁸

3.13 The Australian Curriculum and Reporting Authority (ACARA) was enthusiastic about the potential of the new curriculum to bring about improvements:

[A]s a result of the learning opportunities provided by the Australian curriculum, young people will have a better understanding of the origins of food and fibre – the two terms that we have started using – and have a better understanding of what it takes for us as a country to sustain that capacity.¹⁹

3.14 There appears to be widespread support among teachers for exposing students to agriculture related content. One hundred per cent of primary school teachers and 91 per cent of secondary school teachers in a recent survey stated that they believed it was either very or somewhat important that students learn about food and fibre production.²⁰ Despite this enthusiasm, the committee heard that agriculture in schools is in decline and that it is likely that 'agriculture will disappear from many schools, even at the level of discussion in the curricula, much less as individual subjects.'²¹

3.15 Based on the evidence, it appears clear that if the resources available to teachers are user friendly and readily available there is an appetite in the teaching community to teach the material. Unfortunately, although there are numerous resources available to teachers, they are often hard to find and not optimised for contemporary educational practice. The

15 Professor Richard Roush, School of Land and Environment, University of Melbourne, *Committee Hansard*, 15 May 2012, p. 18.

16 University of Adelaide, *Submission 22*, p. [5].

17 Australian Beef Industry Foundation, *Submission 56*, p. [4].

18 Professor Jim Pratley, Australian Council of Deans of Agriculture, *Committee Hansard*, 26 March 2012, p. 42.

19 Mr Robert Randall, Australian Curriculum and Reporting Authority, *Committee Hansard*, 15 May 2012, p. 10.

20 Mr Ben Stockwin, Primary Industries Education Foundation, *Committee Hansard*, 1 February 2012, p. 39.

21 Australian Council of Deans of Agriculture, *Submission 36*, p. [4].

Primary Industries Education Foundation (PIEF) is currently undertaking a significant program of consolidation and outreach to make materials readily available to educators.²² The committee also heard that PIEF is attempting to facilitate a resource that would allow schools and industry to connect so that students can gain a critical first-hand look at agriculture.²³ The committee considers these projects of critical importance.

3.16 Schools and teachers in regional areas are not exempt from the challenges of distance. Organisations such as PIEF have limited funds available to achieve their goals and need to prioritise. As part of the 2011–12 Budget, the government announced the Regional Education and Jobs Plan initiative. One element of this program was the recruitment of 34 Regional Education, Skills and Jobs Coordinators (Coordinators) in regional communities.²⁴ The committee was informed that: 'Regional Education, Skills and Jobs Coordinators will draw from the range of locally available organisations, program and initiatives.'²⁵ These Coordinators represent an existing network of links with local industry and education bodies. This network may be an effective means to disseminate the work of organisations such as PIEF to teachers beyond what is currently possible with their modest budgets.

3.17 There is also a strong role to be played by local communities themselves in promoting agricultural education. Teachers, local chambers of commerce, and industry can work together to introduce students to possible career opportunities.²⁶ Much depends on the knowledge and resources available to the teacher. The committee believes that one practical way of achieving progress would be for local communities to bridge the gap between new teachers and local industries, as many teachers who move into rural areas may not have any connection with agriculture or the food sector. The committee can foresee more and better exposure by students to the realities of the industry through field visits, visiting speakers, and work experience, all of which could be facilitated through better engagement by local industry with teachers. This investment in time and energy would continue to pay dividends even if teachers return to metropolitan areas, where they would continue to disseminate a realistic (and hopefully attractive) image of rural life to their urban students.

3.18 Before new teachers reach the classroom, there is the potential to engage them with agriculture. Many tertiary institutes offering teacher training are co-located with

22 Mr Ben Stockwin, Primary Industries Education Foundation, *Committee Hansard*, 1 February 2012, p. 41.

23 Mr Ben Stockwin, Primary Industries Education Foundation, *Committee Hansard*, 1 February 2012, p. 43.

24 Department of Innovation, Industry, Science, Research and Tertiary Education, *Answer to Question on Notice*, 1 February 2012 (received 13 March 2012).

25 Department of Innovation, Industry, Science, Research and Tertiary Education, *Answer to Question on Notice*, 1 February 2012 (received 13 March 2012).

26 Mr Ben Stockwin, Primary Industries Education Foundation, *Committee Hansard*, 1 February 2012, p. 43.

faculties of agriculture, such as the University of Melbourne in Victoria and Curtin University in Western Australia. The potential exists to expose trainee teachers in agriculture during their time at university; knowledge they can later take to the classroom. Despite this obvious advantage of being able to reach new teachers before they stand in a classroom full of students (and potential agriculturalists), the committee heard that minimal engagement actually takes place. Representatives from the University of Melbourne reported: 'We have not done a lot of work on it, frankly, but the Dean of Education, the Dean of Science and I have talked about this a lot.'²⁷

Recommendation 1

3.19 The committee recommends that the Australian Council of Deans of Agriculture considers working with the Australian Council of Deans of Education to strengthen engagement between agriculture and education faculties during teacher education programs.

3.20 In the later years of schooling, students can also participate in the VET-in-schools program. VET-in-schools provides students with the opportunity to acquire vocationally focused skills. Skills Australia argued that VET in schools has value in broadening opportunities for school students and providing links to the local economy. However, stakeholders have expressed concerns in relation to the quality and consistency of the program. As such, it is argued that industry has insufficient confidence in the outcomes of this initiative to maximise its potential.²⁸

3.21 Providing students access to industry on more than an observer basis was put to the committee as a way of increasing the likelihood of students pursuing agriculture and agribusiness careers post school. It is argued that schools that consciously match the curriculum to local opportunities not only benefit their students by enabling more hands-on opportunities, but also enables those students to pursue careers locally following graduation.²⁹ It was suggested by Charles Sturt University (CSU) that initiatives to encourage the agribusiness sector to accept students on work experience should be developed.³⁰

3.22 Critical in ensuring the success of VET-in-schools is the inclusion of hands on experience and strong connections with local industries. Skills Australia advocates for workplace training to be included as part of VET-in-schools arguing that:

Adequate workplace training is essential for ensuring students are work-ready upon graduation, but also allows students access to the most up-to-date technology used by industry.³¹

27 Professor Richard Roush, School of Land and Environment, University of Melbourne, *Committee Hansard*, 15 May 2012, p. 21.

28 Skills Australia, *Submission 63*, p. 11.

29 Ricegrowers' Association of Australia and Ricegrowers' Limited, *Submission 58*, p. [6].

30 Charles Sturt University, *Submission 11*, p. 4.

31 Skills Australia, *Submission 63*, p. 12.

3.23 Although the higher education sector is strongly in favour of VET in schools as a way of promoting agriculture to students, some sectors of industry have reservations. It was reported to the committee that the dairy industry, for example, would consider it appropriate that Certificate II level qualifications were offered through schools where appropriate work placements and employment skills are included.³² The DIPDC cautioned against offering Certificate III level qualifications in schools:

The industry has expectations that Certificate III graduates are competent farm hands on a par with other 'trade' graduates and are able to work on a dairy farm. The industry has strong reservations about the capacity of secondary schools to teach this level of study and provide the industry and workplace currency required.³³

Committee view of VET-in-schools

3.24 Given the importance of agriculture to Australia and humanity, the committee considers that serious efforts need to be made to ensure that today's students understand the fundamentals of agriculture to ensure they are equipped with the skills and knowledge to overcome tomorrow's challenges. Only through regular, meaningful exposure will students develop the necessary passion for food and fibre to inspire a future career in that field. However, VET in schools qualifications must meet industry standards and include necessary practical elements to ensure that industry has confidence in the training on offer.

Recommendation 2

3.25 The committee recommends that the Government continues to provide financial support for the promotion of agriculture in primary and secondary schools, such as the work undertaken by the Primary Industry Centre for Science Education and the Primary Industries Education Foundation.

Animal welfare in education

3.26 Animal welfare – along with food safety and product provenance – is an important matter for consumers.³⁴ The committee heard that agricultural education needs to deal with animal welfare issues to reflect the concerns of consumers and retailers.³⁵ Some groups argued to the committee that this rising consumer awareness requires the incorporation of animal welfare principles into the agricultural curricula.³⁶ As consumers are increasingly considering social concerns in their purchase decisions,

32 Dairy Industry People Development Council, *Submission 54*, p. 20.

33 Dairy Industry People Development Council, *Submission 54*, p. 20.

34 Tasmanian Government, *Submission 42*, p. 9.

35 Mr David Lock, Food Industry Association of Western Australia, *Committee Hansard*, 26 March 2012, p. 15.

36 Murdoch University, *Submission 25*, p. [9].

it is important for industry to react to these market changes by including appropriate standards in agricultural production.³⁷

3.27 The majority of submissions received were in favour of including animal welfare principles in agricultural education, so long as those principles are practically based and strike a balance between the needs of the animals and the realities of primary industry.³⁸

3.28 Animal rights activist organisations like Animals' Angels advocate for specific training in animal welfare and proper animal handling. Animals' Angels argue that: 'Compliance with the Animal Welfare Acts, Australian Standards for the Export of Livestock and Codes of Practice can be achieved when the industry is required to initiate training schemes.'³⁹

3.29 On the other hand, some stakeholder groups argued to the committee that additional requirements regarding animal welfare are unnecessary, given the Australian industry already follows best practice. Similarly, ACDA argues that in tertiary education 'animal production is taught in the context of best practice and that necessarily includes animal welfare principles.'⁴⁰ However, Animals' Angels argues that as there are no statutory definitions of 'best practice' or 'competent' in Australia, such claims are entirely subjective. Animals' Angels points to the example of the European Union and Israel who both have clearly articulated definitions.⁴¹

3.30 Further, many submitters argued that there already exists significant consideration of animal welfare in the tertiary curriculum. For instance, UWA includes the subject *Clean, Green and Ethical Production Systems* as part of its teaching program in animal welfare principles⁴², and Murdoch University offers the unit *Animal and Human Bioethics*.⁴³

3.31 The committee recognises that there is growing community interest in animal welfare, including in the primary production sector. However, based on the evidence received, and noting that improvements are always possible, it appears to the committee that universities and RTOs adequately address animal welfare issues in their courses.

Education Delivery

3.32 Discussions of what is included in, and the focus of, agricultural and agribusiness education inevitably lead to discussions of its delivery. Agricultural and agribusiness education face several challenges. This section discusses issues such as

37 Tasmanian Government, *Submission 42*, p. 9.

38 For example, see: Australian Beef Industry Foundation, *Submission 56*, p. [5].

39 Animals' Angels, *Submission 34*, p. 2.

40 Australian Council of Deans of Agriculture, *Submission 36*, p. [4].

41 Animals' Angels, *Submission 34*, pp 2–3.

42 The University of Western Australia, *Submission 16*, p. 4.

43 Murdoch University, *Submission 25*, p. [9].

thin markets and provision of hands-on experience, which are of particular relevance to the delivery of agriculture related education.

3.33 At the tertiary level, there is a variety of delivery options to allow students to pursue agricultural careers. These options include different course structures, as well as the option to study at the under- and post-graduate levels.

3.34 Traditionally, students wishing to pursue careers in agriculture and agribusiness have undertaken a 4-year undergraduate degree specialising in a single area such as 'agriculture' or 'agronomy', or a broad degree such as a 3-year Bachelor of Science with majors in areas such as 'agricultural science'. Early degree courses in Agribusiness were built around an industry placement component mid-way through the course. This had the benefit of the student understanding the relevance of study undertaken to date, better focus on subsequent subject matter in the latter part of the course and often a guarantee of employment post graduation back at the company they had worked as a student.

3.35 As well as the standard three-year undergraduate degree traditionally offered, The University of Melbourne (UoM) and UWA both encourage students to undertake broad 3-year undergraduate degrees, followed by 2-year specialised Masters' degrees in a specific area. This model reflects the education system used in the United States of America and in European countries covered by the Bologna Treaty. It is argued by UWA that this model will 'raise the expectation of students that a minimum standard for agricultural tertiary education is a 3-year undergraduate degree followed by a 2-year masters' degree'.⁴⁴

3.36 One argument in favour of this new model of tertiary education is that more students will be attracted to agricultural careers by being exposed to it in their undergraduate degree, and that students will be able to make more informed career decisions by deferring specialisation until after they have completed their undergraduate education.⁴⁵ However, the model has also been criticised in the past as being more expensive for students who have to study for an additional year.

3.37 Another approach, currently being used by Victoria's La Trobe University, to better facilitate the needs of rural students is the use of multiple campuses. In the case of La Trobe University, students can undertake their first year of study at the Albury-Wodonga campus and then complete their studies in Melbourne. The benefits of this program, as explained by the university:

This helps students by reducing the costs incurred in the relocation to Melbourne for one year. The regional campus also provides a very supportive environment in which regional students can make the critical transition to university studies.⁴⁶

44 The University of Western Australia, *Submission 16*, p. 2.

45 Professor Lynette Abbott, Faculty of Natural and Agricultural Sciences, the University of Western Australia, *Committee Hansard*, 26 March 2012, p. 55.

46 La Trobe University, *Submission 50*, p. 7.

3.38 In the VET sector, many of the NTPs include blocks of education in which students attend classes for a block of time in between extended industry placements. The committee heard concerns that the NTPs for many agriculture related courses are not meeting their objectives because they fail to take into account the unique requirements of agriculture, or specific elements of agribusiness. Vocational training for professions such as a motor mechanic, book-keeper or hairdresser can be delivered at any time of the year, whereas the 'block release' methods of instruction are not suited to agricultural professions. As succinctly put by Rural Skills Australia: 'Our industries generally do not or cannot cater for educational activities that go on for a long period of time.'⁴⁷

3.39 This is different in industries such as horticulture however due to the seasonal nature of the work. For example:

A trainee might be programmed for specific training delivery based on seasonality of subject matter but, a major deviation from the scheduled crop production program may occur, then, in principle both theory and practical demonstration must wait for a further twelve months before the timing is right for the delivery of that subject matter...It is important to deliver theory and practical application of that theory as close together as possible. The National Training Package does not recognise or acknowledge the primary fact that plants 'Do Not' take the weekend off.⁴⁸

3.40 The committee heard that in many instances, a trainee or apprentice may be the only full-time employee of a business. They will likely have discrete responsibilities and be intimately involved in the operation. For the employer to have to release that person for a month at a time can severely disrupt the business for limited benefit to the employee.⁴⁹ The committee heard that stakeholders of Skills Tasmania strongly emphasized that production should not be compromised in the name of training.⁵⁰ A more flexible model of training that recognises the specific requirements of agribusiness may encourage more employers to hire unskilled staff and support their development.

Thin markets

3.41 The committee heard that thin markets in regional and rural areas present special problems in providing skills training for agribusiness. A 'thin market' is one which lacks sufficient demand to create a viable supply. It was reported to the committee that the primary production sector has the characteristics of a thin market where demand for VET services has been modest and delivery made more difficult by the geographic diffuseness of the industry.⁵¹

47 Mr Wayne Cornish, Rural Skills Australia, *Committee Hansard*, 1 February 2012, p. 11.

48 Mr Joe Garnham, *Submission 65*, p. 2.

49 Mr Joe Garnham, *Submission 65*, p. 2.

50 Tasmanian Government, *Submission 42*, p. 8.

51 Dairy Industry People Development Council, *Submission 54*, p. 13.

3.42 The committee heard that even well-resourced businesses struggled to provide their staff with the training they would like because of the challenges of geography. SunRice benefits from well developed internal training mechanisms, but related to the committee an example in which they attempted to facilitate their future leaders completing 'Manufacturing Management' programs. SunRice reports however that:

Due to the distance from Sydney and Melbourne-based tertiary institutions, these programs have not got off the ground – with insufficient numbers to run a series of programs that would be necessary for shift workers. Even despite our efforts, our labour force suffers from a lack of exposure to other 'ways of working', and experience gained elsewhere to benchmark, understand and aspire to best practice in each professional field.⁵²

3.43 Although the competition among RTOs is driving quality and price improvements for students, excessive competition in thin trading markets can have a negative overall influence, especially in regional areas. In some cases, thin markets preclude the involvement of private enterprise altogether. Lower class sizes lead to higher delivery costs, and also reduce the funds available to hire 'industry credible specialists' as teachers.⁵³ Skills Australia recommends that the role of public providers in regional and remote areas be clearly spelt out to ensure the ongoing availability of high quality, afforded training in isolated areas.⁵⁴ If public institutions adopt private-sector models too closely, there is a risk that thin regional markets may not be serviced at all.

3.44 Tocal College's submission articulated the current tension between existing funding arrangements and servicing thin markets:

The current focus primarily on state based funding makes it difficult for agricultural training markets to be properly serviced. The markets are thin and dispersed and as a result no one state can offer a critical mass of individuals to undertake training. An RTO finds it extremely difficult to run the one course funded across a range of state authorities. Therefore, thin markets are difficult to address and are often missing out. This particularly applies to agriculture which has not only thin markets by nature, but also highly dispersed.⁵⁵

3.45 There are signs that industry is currently attempting to overcome the challenges posed by thin training markets. An example is provided by the DIPDC:

[T]he NCDEA has commenced piloting a national NCDEA Diploma in Agriculture that will meet the needs of the Australian dairy industry and will be jointly delivered by alliance partners in line with their teaching capacity. This approach aims for the cross delivery of units between RTOs in different states using e-learning. It seeks to get economies of scale with

52 Ricegrowers' Association of Australia and Ricegrowers' Limited, *Submission 58*, p. [6].

53 Dairy Industry People Development Council, *Submission 54*, p. 14.

54 Skills Australia, *Submission 63*, p. 10.

55 Tocal College, *Submission 6*, p. 1.

student numbers as well as access to specialist teaching expertise of each of the partners.⁵⁶

3.46 The rapid advancement of information and communications technology has the potential to be a critical tool in providing greater access to education and training in rural and remote areas.⁵⁷ This is discussed further in the following section of this chapter.

3.47 Consistent with evidence from Sunrice, Tocal College and the DIPDC, the committee considers that addressing the challenges of thin training markets is critical to ensuring an adequate supply of skilled workers to facilitate industry growth. The committee understands that there are initiatives afoot through the Council of Australian Government Reform Council's *National Agreement for Skills and Workforce Development* to improve the national delivery of VET.⁵⁸ As a state administered function serving a national industry, there needs to be a partnership between industry, RTOs and governments to address the problem.

Recommendation 3

3.48 The committee recommends that the Department of Innovation, Industry, Science, Research and Tertiary Education reviews the impediments to seamless national delivery of agriculture and agribusiness education in the Vocational Education and Training sector.

Recommendation 4

3.49 The committee recommends that the Department of Innovation, Industry, Science, Research and Tertiary Education consult with state and territory agencies and relevant industry bodies to determine the most appropriate delivery model for Vocational Education and Training in the agricultural and agribusiness sector with a view to ensuring adequate funding which will deliver the most effective training outcomes for employees and employers alike.

Distance education

3.50 The geographical diffuseness – and sometimes isolation – of the agriculture and agribusiness workforces can make the delivery of agribusiness education difficult. In order to cater to this isolated market, many universities and RTOs now offer

56 Dairy Industry People Development Council, *Submission 54*, p. 17.

57 Skills Australia, *Submission 63*, p. 11.

58 Council of Australian Governments, *National Agreement for Skills and Workforce Development*, 2008, available from: http://www.federalfinancialrelations.gov.au/content/national_agreements/skills_workforce/skills_agreement.pdf, accessed: 28 May 2012.

courses via distance education enabling students to learn at home and access support and materials via the internet.⁵⁹

3.51 The use of new web-based learning platforms was suggested to the committee as a means to help overcome the difficulties of distance and also encourage professional networking and knowledge sharing.⁶⁰ Online education is particularly promising when it comes to overcoming thin training markets as it allows students to undertake training in their own time, wherever they are, without having to go and sit in a classroom.⁶¹ On the balance of evidence received, it appears that online learning will be a significant tool in addressing the skills shortage, especially as it relates to up-skilling the existing workforce.

3.52 Distance education also offers the opportunity for workers in other industries to undertake courses at the same time as meeting their current commitments. The fly-in, fly-out timetables used by the resources sector appear to be a natural fit in this regard. It is anticipated that at some point the mining boom will either slow down, or workers will search out new challenges.⁶² Many employees in the resource sector have already demonstrated willingness to work in non-metropolitan areas and many of the skill sets in the resources sector, such as skilled tradespeople, intersect with agriculture and agribusiness. The ease with which many agricultural workers were able to transition into the mining sector offers hope that the reverse could occur in the future. Accessing agriculture or agribusiness related education while working in the resource sector may offer a promising source of workers to alleviate the current skills shortage, but also ensure that those workers who wish to stay in rural areas are not forced back to the city for want of furthering their education.

Learning in stages

3.53 The committee heard that a move away from formal accreditation and qualifications towards a 'skills passport' approach may attract more workers to complete further training in agriculture, as industry values skills over certificates.⁶³ As expressed by the National Farmers' Federation:

The Government model is a one-size-fits-all, that being that training packages result in qualifications. Industry is calling for skill sets where employees can take training as needs be at an operational level.⁶⁴

3.54 The Department of Industry, Innovation, Science, Research and Tertiary Education articulated for the committee the government's position on the structure of education:

59 Charles Sturt University, *Submission 11*, p. 2.

60 Marcus Oldham College, *Submission 5*, p. 4.

61 Mr Wayne Cornish, Rural Skills Australia, *Committee Hansard*, 1 February 2012, p. 14.

62 Mr Ian Joseph, Agribusiness Council of Australia, *Committee Hansard*, 15 May 2012, p. 3.

63 Tasmanian Government, *Submission 42*, p. 6.

64 Mr Brian Duggan, National Farmers' Federation, *Committee Hansard*, 1 February 2012, p. 20.

If we think about the [Council of Australian Government] targets, what we are trying to do is get people full qualifications, so we actually do want them to finish and get a full certificate III and above. That is certainly where we are wanting to go in terms of COAG and of halving the number of people who do not have a certificate at that level.⁶⁵

3.55 In spite of the government's targets, statistics provided by AgriFood Skills Australia highlight the emphasis on skills rather than full qualifications in industry and among workers:

The issue for us is skill sets. There are important. There are 87,000 people now enrolled in vocational training. Only 20 per cent ever finish those things...People are going in and doing what they want, but they are also running with their feet in that they get what they want out of a course and that is enough to do a job and get a job, but then they pull out.⁶⁶

3.56 The low levels of take-up and completion of formal qualifications may also be indicative of industry attempting to maximise productivity and minimise costs associated with their workforce. The Food, Fibre and Timber Industry Training Council (WA) Inc. argued that the greatest productivity gain from training comes from providing unqualified workers with basic skills.⁶⁷ This may work against the government's objective of increasing the number of people with more advanced qualifications.

3.57 Evidence provided to the committee indicates that the lower education completion rates in agriculture are not the result of any inherent difference in the composition of the workforce, but are a reflection of the environment in which they do business. The following example was provided to the committee:

Where you have a requirement – such as having to get a qualification to get a meatworker – there are completion rates of between 80 per cent and 90 percent. Where it is not absolutely required to get or stay in a job, you do what you want. Secondly, our industries often do not need full qualifications, so they probably do not promote it as much as they should, either.⁶⁸

Attracting students to agriculture and agribusiness careers

3.58 Although the content and delivery of agriculture and agribusiness education are critical in ensuring that industry and academia have qualified people available to them, it becomes something of a moot point if there are no students to teach. A key issue raised during this inquiry has been the problem of attracting and retaining

65 Ms Linda White, Department of Innovation, Industry, Science, Research and Tertiary Education, *Committee Hansard*, 1 February 2012, p. 57.

66 Mr Arthur Blewitt, AgriFood Skills Australia, *Committee Hansard*, 1 February 2012, p. 7.

67 Mr Brad Armstrong, Food, Fibre and Timber Industry Training Council (WA) Inc., *Committee Hansard*, 26 March 2012, p. 62.

68 Mr Arthur Blewitt, AgriFood Skills Australia, *Committee Hansard*, 1 February 2012, p. 9.

students at both tertiary and Vocational Education and Training (VET) level and secondary school level.

3.59 As early as 1991, the McColl Report spoke of the decline in student enrolments in higher education agriculture-related courses. The report contended that this decline was due to the poor perception of agricultural careers by the general public, and the failure of the agricultural sector to promote the courses and opportunities available.⁶⁹ Skills Tasmania put it to the committee that negative perceptions of agriculture remain a significant factor impacting on student recruitment.⁷⁰

3.60 Many students possess a narrow or non-existent understanding of the career opportunities and courses available to them in agriculture and agribusiness.⁷¹ It is difficult for students to choose to pursue a career in agriculture when they do not know what options are available to them, or what their careers might look like.⁷² As noted by Dr Livingstone of Marcus Oldham College:

[W]hen you think about what does a doctor do, what [does] a lawyer do, what does an accountant do – all of society have a fair grasp of what those people do. But if we say you are a farmer or a grazier or you are studying agriculture then the population really does not have a very good idea about what that person does.⁷³

3.61 In order to overcome the challenge of attracting a sufficient number of students to agriculture to meet future demand, the committee heard that it is necessary to reshape existing perceptions of the sector. It was argued to the committee that:

...the first-and-foremost task would be to convince those people who might want to pursue a career in agriculture that it is not about regional services being less than they might expect in a metropolitan region, that it is not about seasonal conditions that are depressing, that it is not about depression itself, that it is not about suicide—it is not about all those social factors that one reads about when you talk about agriculture.⁷⁴

3.62 In order to address the lack of knowledge in the community at large, and in students in particular, there are a number of programs currently underway. The Primary Industries Centre for Science Education program (PICSE) aims to 'foster and support young people's interest in science, and their subsequent participation in tertiary study leading to research or careers relating to the Food Security sector.'⁷⁵ Similarly, PIEF's mission is to 'inform students, teachers and the broader community

69 La Trobe University, *Submission 50*, p. 9.

70 Skills Tasmania, *Submission 42*, p. 1.

71 Ms Barbara Grey, *Submission 61*, p. [1].

72 Mr Bruce Hutchinson, *Committee Hansard*, 26 March 2012, p. 12.

73 Dr Simon Livingstone, Marcus Oldham College, *Committee Hansard*, 1 February 2012, p. 50.

74 The Hon. Dr Hendy Cowan, *Committee Hansard*, 26 March 2012, p. 3.

75 Primary Industries Centre for Science Education, *Submission 4*, p. [4].

about the primary industries and the career opportunities which they offer.⁷⁶ The *raison d'être* for both these programs is to advance the knowledge of, and interest in, agriculture among school age students.

3.63 There was widespread support for both of these bodies from industry, and numerous key stakeholders expressed support of the work of PIEF and PICSE as they continue to introduce students to agriculture and equip teachers to bring agriculture to the classroom.⁷⁷ The committee notes and supports the government's commitment of \$225 000 over three years to the PIEF to ensure they can continue their work.⁷⁸ As well as continuing to support PIEF, the committee considers that ongoing support of PISCE – an industry and education partnership program designed to stimulate student interest in studying science at university with a pathway into primary industry – is critical to ensure that there is a flow of students from schools into further education and careers in agribusiness.

Recommendation 5

3.64 The committee recommends that the government explores options for the Regional Higher Education, Skills and Jobs Coordinators to work with organisations such as the Primary Industries Education Foundation to raise the profile of agriculture in schools.

3.65 Just as primary and secondary students are now being informed of the opportunities available to them, tertiary students also need to be informed of their opportunities. The Birchip Cropping Group's submission calls for future employers to reach out to tertiary students from a variety of disciplines – not necessarily exclusively agribusiness – by offering specific, real world career examples, familiarisation tours, work experience and cadetships.⁷⁹ Similarly, the University of Tasmania argues that: 'Industry peak bodies need to sell agricultural careers, they need to be the ones in the market promoting the sector to students.'⁸⁰

3.66 Re-writing the food sector narrative to inspire young citizens, revitalise the existing workforce, and tighten the bonds that have loosened between metropolitan and regional areas was highlighted as a key area of concern for stakeholders. The community – young people in particular – need to be informed of the challenging, varied and rewarding careers available in food and fibre production, value adding, processing, marketing and retailing for both Australian consumers and the rapidly

76 Primary Industries Education Foundation, *Submission 47*, p. 1.

77 Tocal College, *Submission 6*, p. 2; University of Adelaide, *Submission 22*, p. [7]; The University of Western Australia, *Submission 16*, pp 2-4.

78 Senator the Hon. Joe Ludwig, Minister for Agriculture, *Primary Industries Education Boosted*, media release, 11 May 2012, available from: http://www.maff.gov.au/media_office/media_releases/media_releases/2012/may/primary-industries-education-board, accessed: 28 May 2012.

79 Birchip Cropping Group, *Submission 62*, p. [2].

80 University of Tasmania, *Submission 21*, p. 2.

increasing populations in Asia. As succinctly put by GPA, attracting students is the only way to solve the challenges facing agribusiness:

If we want to attract sharp minds that are going to solve the productivity dilemmas that we face into the future, we need to make this somewhere that is attractive to be.⁸¹

Cost of agriculture and agribusiness education for students

3.67 The costs of post-secondary and higher education are likely to act as a deterrent for many students, and employers considering further training for their workforce. This section will discuss the cost of agriculture and agribusiness education for students at both the VET and tertiary level.

3.68 Agriculture, and the students who are considering careers in it, are both price sensitive. Analysis undertaken by the Victorian Department of Primary Industries and the National Centre for Dairy Education Australia (NCDEA) revealed that price sensitivity is a relevant factor in industry engaging in formal qualifications.⁸² Deloitte Access Economics also found that agricultural students are more susceptible to price change than most other sectors.⁸³ Although the reasons behind the high levels of price sensitivity in industry and among students are difficult to identify, it is clearly a barrier to education that should be considered in formulating policy.

3.69 The committee heard that the cost of some agricultural university courses may be dissuading some students from pursuing those courses. For example, a veterinary science degree usually lasts between five and six years with tuition fees ranging up to \$250 000.⁸⁴ A four-year agriculture degree would cost in excess of \$30 000 in course fees alone. It was pointed out that in the current market three-year science and natural resources management degree graduates were having no trouble finding work in the sector. Traditionally agriculture has been a four-year degree. With the current shortage of labour in the agribusiness sector there is little incentive for students to undertake a four-year degree when a three-year degree offers the same opportunities upon graduation, may attract lower fees, and results in a reduced debt upon graduation.⁸⁵

3.70 The committee received many recommendations to include agriculture on the National Priority Disciplines list.⁸⁶ Inclusion on this list would reduce student

81 Mr Pete Mailler, Grain Producers Australia, *Committee Hansard*, 1 February 2012, p. 29.

82 Dairy Industry People Development Council, *Submission 54*, pp 14–16.

83 Deloitte Access Economics, *The Impact of Changes to Student Contribution Levels and Repayment Thresholds on the Demand for Higher Education*, 2011, p. 53.

84 Dr Barry Smyth, Australian Veterinary Association, *Committee Hansard*, 1 February 2012, p. 33. Dr Smyth appears to be referring to full-fee veterinary science courses. Veterinary Science is normally a five- or six-year degree attracting Band 3 student contributions (up to \$9425 per year in 2012) when enrolled as a Commonwealth Support Student resulting in a student debt upon graduation of almost \$60 000.

85 Dairy Industry People Development Council, *Submission 54*, p. 22.

86 Murdoch University, *Submission 25*, p. [5].

contributions by around \$3500 per year and importantly would send a clear message that the government considers agriculture to be a national priority.⁸⁷ Unfortunately, the government's decision to cease funding reduced student contributions for national priority areas has closed a promising avenue to increase the profile and appeal of an agribusiness education. Listing agribusiness as a 'National Priority' would also have sent a strong positive message to future students.

3.71 The committee heard that some kind of student loan relief could be used as a way to attract young graduates to rural and regional areas and overcome, at least to some extent, price sensitivities.⁸⁸ In order to attract metropolitan students, a significant vein of largely untapped talent, some kind of loan relief could be considered as an incentive.⁸⁹ Additional student financial assistance such as scholarships were also suggested.⁹⁰ However, La Trobe University argues that the provision of scholarships alone is insufficient to adequately address the agricultural skills shortage without efforts to address the misconceptions that surround agribusiness careers.⁹¹

3.72 The committee also heard about the high costs for students undertaking VET courses. Students undertaking VET courses through an RTO are ineligible to receive HECS-HELP which would enable a student to fully defer their student contribution until after they have graduated and commenced working. Instead, VET students undertaking a diploma-level course or above can receive FEE-HELP which carries a loan fee of 20 per cent, but allows students to defer payment until they graduate.⁹² Due to the loan fee applied, a three-year course that attracts fees of \$12 000 per year would result in a student owing almost \$44 000.⁹³ Although this situation is not specific to agriculture, very high costs may discourage potential students.

3.73 Students wishing to pursue agricultural higher-research degrees face related cost challenges. The road to a research career is a long and Spartan one, especially in the early years. The committee heard that the stipend received by postgraduate scholars, in the region of \$22 000 per annum with no superannuation, was a primary discouraging factor for students. Professor Spithill from La Trobe University related a common refrain from students: 'why would I do a PhD on \$22 000 a year? Make it

87 University of Adelaide, *Submission 22*, p. [6]; Professor Jim Pratley, Australian Council of Deans of Agriculture, *Committee Hansard*, 26 March 2012, p. 43.

88 Dr Barry Smyth, Australian Veterinary Association, *Committee Hansard*, 1 February 2012, p. 35.

89 Mr Ken Severson, *Committee Hansard*, 26 March 2012, p. 31.

90 Murdoch University, *Submission 25*, p. [5].

91 La Trobe University, *Submission 50*, p. 8; Department of Agricultural Sciences, La Trobe University, *Committee Hansard*, 26 March 2012, p. 69.

92 VET FEE-HELP, *Study Assist*, <http://studyassist.gov.au/sites/studyassist/help-payingmyfees/vet-fee-help/pages/vet-fee-help#IsThereALoanFee>, accessed: 22 May 2012.

93 Dr Damien Adcock, Northern Melbourne Institute of TAFE, *Committee Hansard*, 15 May 2012, p. 35.

\$40 000 and I'm interested, but I'm just not interested in being poor, basically.⁹⁴ The stipend value is around 80 per cent of the minimum wage.⁹⁵

3.74 It was pointed out by the University of Adelaide that the brightest students who have the potential to become excellent research scientists, were likely to be offered well-paying jobs when they graduate from their undergraduate degrees, rendering them unavailable to undertake research degrees.⁹⁶ Although unable to compete with the salaries on offer from the mining sector, some graduates from agricultural courses command competitive salaries of up to \$60 000 per year.⁹⁷ The committee heard that some bodies, the GRDC for example, were offering excellent scholarships that meant researchers may receive around \$40 000 per year, but this still compares poorly with industry.⁹⁸ It was argued to the committee that the funds disbursed through postgraduate scholarships might be more effective if there were fewer scholarships offered but with a higher value attached to them.⁹⁹

Cost of education for non-metropolitan students

3.75 The students who are most attracted to formalised education in agricultural sectors – those from the country – need to overcome some of the greatest barriers to accessing that education. The 2008 Federal Government Review of Higher Education (the Bradley Report) highlights the issue of regional underrepresentation:

People from regional and remote parts of Australia remain seriously under-represented in higher education and the participation rates for both have worsened in the last five years...Retention of the regional group has also been decreasing relative to urban students and retention rates are now 3 per cent below the rates of the remainder of the student population. The success and retention patterns for remote students are of much greater concern. The indicator levels are very low compared with their non-remote peers. For example, success rates are currently 9 per cent below and retention is 13 per cent below the rates of other students.¹⁰⁰

94 Professor Terry Spithill, Department of Agricultural Sciences, La Trobe University, *Committee Hansard*, 26 March 2012, p. 66.

95 University of Tasmania, *Submission 21*, p. 1; La Trobe University, *Submission 50*, p. 5.

96 University of Adelaide, *Submission 22*, p. [6]; Murdoch University, *Submission 25*, p. [8].

97 The Hon. Dr Hendy Cowan, *Committee Hansard*, 26 March 2012, p. 4; cf. Mr Ken Severson, *Committee Hansard*, 26 March 2012, p. 30; cf. Associate Professor David Miller, School of Veterinary and Biomedical Science, Murdoch University, *Committee Hansard*, 26 March 2012, p. 37; cf. Dr Peter Sale, Department of Agricultural Sciences, La Trobe University, *Committee Hansard*, 26 March 2012, p. 64.

98 Professor Kadambot Siddique, Faculty of Natural and Agricultural Sciences, the University of Western Australia, *Committee Hansard*, 26 March 2012, p. 60.

99 Australian Council of Deans of Agriculture, *Submission 36*, pp [2–3].

100 *Review of Australian Higher Education: Final Report*, December 2008, p. 31.

3.76 It is widely recognised that students from rural backgrounds face additional financial hardships in accessing tertiary education.¹⁰¹ Several submissions noted that the recent changes to the eligibility requirements for Youth Allowance have 'disproportionately affected rural students, providing a disincentive for them to move from home to study at university.'¹⁰²

3.77 The committee heard that a potential way to attract more rural students to university involved modifying or waiving the qualification time required to establish independence in relation to student income support. It was argued by ACDA that 'for prospective students who take the "gap" period in order to qualify, the attrition rate is high and is thus counterproductive in priority areas.'¹⁰³

Cost and funding of agricultural and agribusiness education for institutions

3.78 The committee heard that agriculture is a very expensive course for universities to deliver due to the necessity of acquiring and maintaining up-to-date equipment, facilities and low staff-to-student ratios.

3.79 Agriculture courses are expensive because of a combination of low student numbers and high fixed costs from salaries and infrastructure.¹⁰⁴ It is difficult to teach agricultural courses without significant hands-on components and these require access to facilities such as land, animals, and machinery. As explained by CSU:

[I]n-field and other 'hands-on' practical experience is a vitally important component of the education of agricultural science students to enable them to rapidly and competently contribute to meeting the national challenges of enhancing agricultural productivity, export earnings, and the quality of environmental stewardship. The provision of these practical skills requires the funding of appropriately specialised and experienced academic and technical staff at lower than usual student:staff ratios to satisfy both the requisite learning outcomes and meet the necessary health and safety, and where necessary, animal welfare requirements associated with those activities.¹⁰⁵

3.80 As student cohorts decrease in size through falling enrolment levels, the costs associated with teaching students increase as economies of scale are lost. It was reported to the committee that the cost of utilising field facilities, laboratories, excursions and the like become prohibitive as student numbers decline, and this can result in declining course quality.¹⁰⁶ For example consider the following hypothetical. Suppose that a university maintains a working farm to allow students to undertake

101 Australian Council of Deans of Agriculture, *Submission 36*, p. [6].

102 University of Adelaide, *Submission 22*, p. [3].

103 Australian Council of Deans of Agriculture, *Submission 36*, p. [6].

104 Murdoch University, *Submission 25*, p. [3].

105 Charles Sturt University, *Submission 11*, p. 2.

106 Australian Council of Deans of Agriculture, *Submission 36*, p. [1]; La Trobe University, *Submission 50*, p. 2.

practical training, and the farm has the capacity for 100 students. Regardless of whether there are 80 students or 30 students using the facilities the costs do not vary greatly as the primary expenses are the capital expenditure to purchase property and plant and ongoing maintenance. La Trobe University in Melbourne noted that it may be forced to sell its on-campus farm reserve in order to restore other teaching infrastructure in the future.¹⁰⁷

3.81 Murdoch University reported to the committee that government funding for agricultural education at the tertiary level is inadequate, forcing universities to subsidise agriculture courses. Even in courses that remain popular with students, such as veterinary science, institutions find themselves struggling with funding in order to maintain low staff-to-student ratios and hands-on components. For universities, it was reported that there is a funding gap of around \$7000 per student annually compared to the government contribution and the cost to deliver the course. When a faculty has several hundred students, this is a significant impost.¹⁰⁸

3.82 The Commonwealth provides agricultural units of study with the highest level of funding support available through the Commonwealth Grant Scheme for higher education students. The Commonwealth contributed \$19 542 per Commonwealth Supported Place in 2011.¹⁰⁹

3.83 VET training is substantially provided by state governments with the Commonwealth contributing through specific programs such as the Productivity Place Program for individual students, and through mechanisms such as the Education Investment Fund for infrastructure development. In 2010 around 47 per cent (\$3.3 billion) of VET operating revenue came from state and territory governments and 29 per cent (\$2 billion) from the Commonwealth government.¹¹⁰

3.84 During the inquiry the committee heard that funding for some VET qualifications has continued to diminish. For example, Longerenong College reported that the student contact hour rate has recently decreased from \$7.80 to \$5.25 for the Advanced Diploma of Agriculture. In order to continue to offer high quality courses student fees have to be raised as government funding falls.¹¹¹ Similarly, the Northern Melbourne Institute of TAFE (NMIT) noted that fee support has been

107 La Trobe University, *Submission 50*, p. 2.

108 Dr Barry Smyth, Australian Veterinary Association, *Committee Hansard*, 1 February 2012, p. 33.

109 Skills Australia, *Submission 63*, p. 8.

110 National Centre for Vocational Education Research, *Australian vocational education and training statistics: financial information 2010*, available from: <http://www.ncver.edu.au/publication/s/2426.html>, accessed: 3 May 2012. The remainder is made up of fee for service activities (16 per cent or \$1.1 billion), student fees (4 per cent), and ancillary trading and other revenue (4 per cent).

111 Mr John Goldsmith, Longerenong College, *Committee Hansard*, 15 May 2012, p. 31.

effectively halved for diploma level qualifications in recent times increasing the costs for students.¹¹²

3.85 Clearly agricultural education is both expensive to teach and is facing competitive pressures within universities. In order to adequately fund the teaching of agribusiness at universities, and in particular regional universities, it was suggested by the Hon. Dr Hendy Cowan that the government apply funding loading of 50 per cent to agricultural colleges.¹¹³ Some universities also suggested to the committee that increasing the loading for agriculture and agribusiness related education would be of great assistance.¹¹⁴

3.86 Even if the government is able to provide greater support to education in the short term, industry will be required to invest more money into scholarships, marketing and work experience to ease some of the budgetary pressure on education institutes.¹¹⁵ The education sector needs to engage with industry regarding how they can work together, and not simply expect industry to provide money.

3.87 The Tasmanian Farmers and Graziers Association argued that practical training within industry would minimise costs for education providers while maintaining opportunities for hands-on training for students.¹¹⁶ Universities would no longer have to maintain expensive agricultural facilities such as farming land and dairies. Students would also have the opportunity to gain practical experience in a cutting edge environment. Skills Australia similarly argued for a collaborative approach between industry, government and education providers.¹¹⁷

3.88 Industry has been supportive of research efforts in the past, but they need to contribute more to meeting their own human resource needs. The committee heard that there was already some industry involvement with groups such as the Australian Wool Education Trust and Meat and Livestock Australia providing support and encouragement to agricultural education.¹¹⁸ Positive examples show the way, but industry needs to follow en-mass to ensure they have the skills they need.

Demand-based funding

3.89 From 2012, universities in Australia are being funded based on the number of students they enrol, a system known as demand-based funding. Demand-based funding models are increasingly in vogue as a means to ensure that training is

112 Dr Damien Adcock, Northern Melbourne Institute of TAFE, *Committee Hansard*, 15 May 2012, p. 34.

113 The Hon. Dr Hendy Cowan, *Committee Hansard*, 26 March 2012, p. 5.

114 Associate Professor John Webb, Department of Agricultural Sciences, La Trobe University, *Committee Hansard*, 26 March 2012, p. 64.

115 Ms Adele Millard, *Committee Hansard*, 26 March 2012, p. 13.

116 Tasmanian Farmers and Graziers Association, *Submission 30*, p. 4.

117 Skills Australia, *Submission 63*, p. 10.

118 Associate Professor David Miller, School of Veterinary and Biomedical Science, Murdoch University, *Committee Hansard*, 26 March 2012, p. 35.

responsive to the needs of industry and individuals in a dynamic economy. In its submission, DEEWR reported that from 2012 public universities will no longer be limited in the number of student places they offer. As DEEWR explains: 'Under the demand driven funding system, higher education providers will decide how many places they will offer and in which disciplines in response to employer and student demand.'¹¹⁹ At the most rudimentary level, this change means that universities will receive more funding the more students they enrol.

3.90 The 2010 report *Higher Education Base Funding Review* chaired by Dr Jane Lomax-Smith identified agriculture-related courses as in need of additional funding contributions from both the Commonwealth and students to accurately reflect the cost of the education provided under a demand-based funding system.¹²⁰

3.91 The committee heard a number of concerns regarding the impact of demand-based funding on agriculture and agribusiness education at both the tertiary and VET-level. The Director of the Centre for the Study of Rural Australia at Marcus Oldham College, Dr Simon Livingstone, explains:

Faculties are being appraised against their ability to generate income. Agriculture rates unfavourably as a contributor to university financial health compared, for example, to business and law programs.¹²¹

3.92 One of the possible negative effects to emerge from the move towards demand-based funding in higher education is the mismatch between students' choice of course and the skills requirements of industry.¹²² As put by one university, the new system is 'a funding regime that rewards large class sizes'.¹²³ It was noted by UWA that the decline of funding for university places limits the ability of institutions to be innovative, for fear that something new will not be as attractive to students as current options, thereby constraining them to older practices.¹²⁴

3.93 Unfortunately, the Commonwealth appears not to have acted on Dr Lomax-Smith's call for additional funding for agriculture under the new regime. DEEWR submitted that:

Industries, such as agriculture, can work with schools, universities, and organisations like the Primary Industry Centre for Science Education, to encourage students to undertake courses that meet the needs of the labour market.¹²⁵

119 Department of Employment, Education and Workplace Relations, *Submission 40*, p. [2].

120 Skills Australia, *Submission 63*, p. 8.

121 Marcus Oldham College, *Submission 5*, attachment 1.

122 Skills Australia, *Submission 63*, p. 16.

123 University of Adelaide, *Submission 22*, p. [7].

124 The University of Western Australia, *Submission 16*, p. 4.

125 Department of Employment, Education and Workplace Relations, *Submission 40*, p. [2].

3.94 Some stakeholders in the VET arena expressed reservations about the potential future application of this model to agriculture courses in VET. It was argued that demand-based funding favours low-costs courses, and many prospective providers will focus their efforts on them. Courses such as agriculture are expensive to deliver and therefore less profitable for institutions leading to the decline of those courses.¹²⁶

Research funding

3.95 It was reported to the committee that research funding provided to universities is generally insufficient to cover the actual costs of undertaking research. This underfunding is often in the order of 25–50 per cent which must be met from within the university's budget.¹²⁷

3.96 One of the reasons put to the committee that agricultural education is so expensive is that many universities have moved to a funding model that charges fixed amounts for space and facilities used in research. Murdoch University explains the challenge this poses for agriculture:

Simply by virtue of the nature and scope of agricultural research, e.g., glasshouses, animal housing, laboratories, research farm infrastructure, faculties/schools conducting research are therefore charged more for space used to conduct the research.¹²⁸

3.97 The committee heard that although the return on investment for agricultural research is relatively high, that benefit often does not accrue to the university itself. Furthermore, it was posited that:

The value of some of the work done by agricultural researchers is less obvious because it stops losses rather than producing gains. The program to counter rust in cereal crops is a prime example. If this program did not exist, annual losses of more than \$100m would occur.¹²⁹

3.98 Funding for agriculture related research in universities through Australian Research Council Grants has not enjoyed a high success rate.¹³⁰ It was put to the committee that securing funding for agriculture was 'very, very hard'.¹³¹

3.99 Universities have historically been major players in agriculture research, but as student numbers decrease and funding is allocated away from agricultural faculties,

126 Tocal College, *Submission 6*, p. 1; Dairy Industry People Development Council, *Submission 54*, p. 13.

127 Murdoch University, *Submission 25*, p. [3].

128 Murdoch University, *Submission 25*, p. [3].

129 Mr Graeme Batten, *Submission 38*, p. 4.

130 Associate Professor David Miller, School of Veterinary and Biomedical Science, Murdoch University, *Committee Hansard*, 26 March 2012, p. 35.

131 Professor Kadambot Siddique, Faculty of Natural and Agricultural Sciences, the University of Western Australia, *Committee Hansard*, 26 March 2012, p. 60.

their research capacities are at risk of erosion.¹³² In response to these pressures, some universities have pursued a path of collaboration with other bodies to maximise use of available funding. The University of Tasmania reported:

The School of Agricultural Science set the national trend in 1997 with the partial co-location and merger with the state agency research facilities via the Tasmanian Institute of Agricultural Research Joint Venture Agreement. This has allowed for staff consolidation, the sharing of specialist facilities and the maintaining of a critical mass of staff involved in agriculture within the University.¹³³

3.100 Similarly, CSU and La Trobe University both reported that they have established partnerships with other government research bodies to maximise their research potential.¹³⁴ Along with strengthening ties to other government and private sector research bodies, the committee considers that it is important for universities to increase collaboration among academics, researchers and facilities. Some of the costs of agricultural research may be minimised by the sharing of facilities, data, and capital.

3.101 Due to a shortage of government funding, industry-funded research now represents a higher proportion of all agricultural research. This change has significantly narrowed the pool of available talent and also resulted in research that is more commercially focused as opposed to broader general industry advancement programs.¹³⁵

Recommendation 6

3.102 The committee recommends that the Australian Council of Deans of Agriculture work with member universities to develop a collaboration framework to optimise research investment and improve knowledge transfer in agriculture and agribusiness research.

The decline in the number of agriculture and agribusiness education providers

3.103 The decline, and in some cases outright closure, of regionally based agricultural colleges is of particular concern to the committee. The decline of the old pillars of agricultural education in Australia such the Muresk Institute in Western Australia, the Hawkesbury Agricultural College in New South Wales – among others – are a sad indication of the health of the sector.¹³⁶ Shortly after the commencement of this inquiry it was announced that agricultural enrolments at the

132 Professor Richard Roush, School of Land and Environment, University of Melbourne, *Committee Hansard*, 15 May 2012, p. 18.

133 University of Tasmania, *Submission 21*, p. 3.

134 Charles Sturt University, *Submission 11*, p. 3; La Trobe University, *Submission 50*, p. 7.

135 Landmark Operations Limited, *Submission 27*, p. [3].

136 Dr Damien Adcock, Northern Melbourne Institute of TAFE, *Committee Hansard*, 15 May 2012, p. 39.

Hawkesbury Agricultural College would be suspended due to a lack of student interest. The demise of one of the oldest and most prestigious agricultural colleges is a siren song that should not be ignored.

3.104 Australia currently has 39 universities but well under a third provide agriculture related courses.¹³⁷ Given that there were 23 campuses providing agriculture or agricultural science degrees in the 1980s and that now there are fewer than 10 in the 2010s, the decline is readily apparent.¹³⁸ The place of agriculture within universities has also been in decline: when the University of Western Australia was established in 1911 the School of Agriculture was the second largest faculty on campus, today it is the second smallest.¹³⁹

3.105 A result of the closure of many regional agricultural colleges and campuses has been a consolidation of agricultural education providers in the major cities. There are now only four campuses in regional Australia offering agriculture related degrees.¹⁴⁰

3.106 Some submissions argued that this geographic consolidation is more important than the overall decline in the number of facilities.¹⁴¹ Metropolitan universities do not provide students with the same level of practical experience as regional agricultural colleges, and they may be more difficult for regional students to access.¹⁴²

3.107 Falling agriculture enrolments and metropolitan consolidation threaten the ongoing existence of the agricultural colleges that remain, and which have previously been an important element in the education spectrum between the more theoretically-focused universities, and skills-orientated VET providers.¹⁴³ Graduates of tertiary agricultural colleges have a combination of practically orientated skills as well as a strong foundation in agriculture, business, science, and agriculture specific practical knowledge.¹⁴⁴ While university-based agricultural degrees are obviously important for producing tomorrow's researchers, developers, and scientists, the committee heard that at present, many tertiary institutions are producing graduates with strong theoretical knowledge, but lacking in practical know-how.¹⁴⁵ It was submitted that many

137 Marcus Oldham College, *Submission 5*, attachment 2.

138 Australian Council of Deans of Agriculture, *Submission 36*, p. [2].

139 The Hon. Hendy Cowan, *Committee Hansard*, 26 March 2012, p. 2.

140 Australian Council of Deans of Agriculture, *Submission 36*, p. [2].

141 Professor Lindsay Falvey, *Submission 29*, p. 7.

142 Professor Lindsay Falvey, *Submission 29*, p. 8.

143 The Hon. Philip Gardiner MLC and the Hon Brendon Grylls MLA, *Report into the future commercial viability of the Muresk Institute*, February 2010, p. 13.

144 The Hon. Philip Gardiner MLC and the Hon Brendon Grylls MLA, *Report into the future commercial viability of the Muresk Institute*, February 2010, p. 10.

145 Mr Alan Fisher, Farm Machinery Dealers Association of Western Australia, *Committee Hansard*, 26 March 2012, p. 23.

employers prefer graduates from more vocationally focussed courses that also include sufficient theory to enable them to boost productivity, solve challenging problems, and implement new practices.¹⁴⁶

3.108 The decline of agricultural colleges has also removed the clearest pathway from VET to higher education. The committee is of the view that more support needs to be provided to students to transition from VET courses – where many students discover their interests and professional aptitudes – to tertiary courses that will enable them to become leaders in their field. The committee heard that agricultural colleges – such as the Muresk Institute – once bridged the divide between research universities and VET providers. With the decline of agricultural colleges, alternative arrangements need to be put in place to ensure that students can seamlessly transition from VET to higher education.

3.109 The foremost factor put to the committee in explaining the decline of regional campuses is the costs associated with maintaining them. The financial metrics used by large metropolitan universities may result in negative outcomes for regional campuses. The move to a competitive, demand-driven, funding model was highlighted to the committee as a significant threat to the longevity of agricultural colleges which have higher funding requirements and comparatively low student numbers.¹⁴⁷ Describing the decision to close the Muresk Institute, the Hon. Dr Hendy Cowan commented:

[T]he Muresk Institute was closed by Curtin University because the financial administration of Curtin University determined that it was costing more to deliver an undergraduate degree to a student at Muresk than it was to deliver the same degree at Bentley [in Perth]. As a consequence, Muresk was to be wound down and the course offered at Bentley.¹⁴⁸

3.110 A recent review of regional agricultural tertiary providers found that only two – the University of New England at Armidale in New South Wales and Marcus Oldham College near Geelong in Victoria – remain sustainable as independent entities.¹⁴⁹ Other regional campuses that offer agriculture related courses fall under the umbrella of larger city-based campuses who cross-subsidies their regional campuses.¹⁵⁰

3.111 The example of Marcus Oldham College is an indication that the traditional structure of agricultural colleges that straddle research focused universities and

146 Mr Bruce Hutchinson, *Committee Hansard*, 26 March 2012, p. 10.

147 The Hon. Philip Gardiner MLC and the Hon Brendon Grylls MLA, *Report into the future commercial viability of the Muresk Institute*, February 2010, pp. 12–13.

148 The Hon. Dr Hendy Cowan, *Committee Hansard*, 26 March 2012, p. 5.

149 The Hon. Philip Gardiner MLC and the Hon Brendon Grylls MLA, *Report into the future commercial viability of the Muresk Institute*, February 2010, p. 30.

150 The Hon. Philip Gardiner MLC and the Hon Brendon Grylls MLA, *Report into the future commercial viability of the Muresk Institute*, February 2010, p. 58; Professor Denise Bradley, *Review of Australian Higher Education – Final Report*, December 2008, p. 111.

vocationally orientated VET providers remain viable. The Principal of Marcus Oldham College – a private regional provider of agribusiness education that continues to maintain viable cohorts of students – posited to the committee that its success is:

Because we have been independent, we have been managed solely by [our] board. We have not been influenced necessarily by outside bodies that have said that we should be offering these sorts of courses or these sorts of programs, so I think there has been real strength in governance.¹⁵¹

3.112 The example of Marcus Oldham College highlights that regional campuses providing agricultural and agribusiness education and training still have the potential to remain economically viable. A key difference between the example of Marcus Oldham College and those universities that no longer offer agribusiness is that the decision to offer agribusiness courses is based on more than fiscal interests alone.

Committee View

3.113 The committee is of the view that tertiary agricultural colleges are an important element in the agricultural education framework that fill an important void between research-focused universities and vocation-focused VET providers. In regions where there are no longer any tertiary agricultural colleges additional efforts need to be made to strengthen the arrangements to facilitate VET students and workers with considerable industry experience accessing higher education.

Recommendation 7

3.114 The committee recommends that the government commissions a study inquiring into the most appropriate higher education framework to support high-level, practically-focused agribusiness education with a view to implementing the national food plan. The review should consider governance and funding arrangements (recognising the significant costs of delivering agricultural and farm studies), the effectiveness of regional campuses, needs of industry and students, and pathways between VET and higher education.

University staff

3.115 A corollary of the decline in the number of agricultural and agribusiness education providers is the impact it has on the number of instructors and researchers available for agricultural education. Two seemingly contradictory trends coexist in Australian higher education institutions teaching agriculture and agribusiness: a shortage of qualified academics and teachers, and staff cuts that discourage students from pursuing academic careers.

3.116 Universities are facing a skills shortage of their own when it comes to finding adequate staff to teach agricultural courses and undertake research. The University of Western Australia reported that:

151 Dr Simon Livingstone, Marcus Oldham College, *Committee Hansard*, 1 February 2012, p. 47.

We advertised for a professor of entomology and we had to advertise for almost two years. Finally we got one from the United States. So, for a lot of our highly talented scientists and teachers, we have to depend on overseas.¹⁵²

3.117 At the same time as universities are struggling to fill available positions, La Trobe University's submission reports a steady decline of agricultural staff at that university.¹⁵³ The committee heard of the impacts on staff caused by declining students enrolments:

It has been a sad story of decline and constraint. It almost followed the student numbers down. They fell and then our staff numbers were cut by almost 50 per cent, and then we just had to pick up the pieces and survive. So it has been difficult. As you lose students you lose funding and as you lose funding you lose resources. As you lose resources you lose the technicians, tutors and secretaries.¹⁵⁴

3.118 As the number of staff decline as faculties downsize to meet their budgetary constraints, additional administrative and teaching loads put pressure on the remaining staff and limit their ability to undertake research. Prospective teachers and researchers are also presented with an image of high-workloads and an uncertain medium-term future.

3.119 In order for graduates in the agricultural sector to gain the necessary skills to meet the changing needs of their professions, there needs to be sufficient numbers of teachers and researchers to support them. Training an agricultural researcher or teaching professional is extremely time intensive. As explained by GPA:

The plant pathologist or entomologist or plant breeder does not pick it up in six months and change in two years; these people hone their skills over 30 or 40 years, you get the best value out of them after 20 years and then you spend the next 10 years trying to train the next guy through so that you don't step back.¹⁵⁵

Research

3.120 Research in agriculture is important to ensure that Australia continues to improve productivity, adapts effectively to changes in the natural environment, and adequately manages risks such as pests and disease. This section will explore issues in agricultural research with a focus on attracting talent and ensuring that agriculture is well-placed to make the most of research findings.

3.121 Agricultural research is increasingly multidisciplinary and requires the collaboration of chemists, physicists, computer scientists, mathematicians and

152 Professor Kadambot Siddique, Faculty of Natural and Agricultural Sciences, the University of Western Australia, *Committee Hansard*, 26 March 2012, p. 57.

153 La Trobe University, *Submission 50*, p. 4.

154 Dr Peter Sale, Department of Agricultural Sciences, La Trobe University, *Committee Hansard*, 26 March 2012, p. 68.

155 Mr Pete Mailler, Grain Producers Australia, *Committee Hansard*, 1 February 2012, p. 26.

engineers among others.¹⁵⁶ Although individual institutions will develop their own models, the future of agricultural research will be ensured through the development of greater ties between institutions and academic disciplines. This will ensure not only greater efficiencies in the use of infrastructure, but the spread of new ideas and expertise.

Attracting Academic Talent

3.122 Chapter two highlighted the numerous skills shortages in the agriculture and agribusiness sector. Agricultural research is another branch of the profession that is at risk of suffering a shortage of appropriately qualified personnel. It was reported to the committee by ACDA that the agricultural research workforce is skewed towards older demographics with an estimated 50 per cent of researchers over 50 years of age.¹⁵⁷ By one estimate, half of all agricultural researchers will retire by 2018.¹⁵⁸ It was reported to the committee that there is an insufficient number of appropriately skilled researchers being trained to replace the current generation of researchers.¹⁵⁹ Over the period of 1999–2010 only around 20 per cent of agriculture graduates were in further study one year after graduation (compared to over 40 per cent for graduates of the humanities).¹⁶⁰ La Trobe University pointed out that it had not had a single agriculture graduate directly enrol in a PhD program in the last five years.¹⁶¹ Although postgraduate courses in agriculture have been successful in attracting international students, there is limited growth from local students.¹⁶²

3.123 A number of factors conspire to make a career in agricultural research less appealing than it once was. It was reported to the committee that a research employment pathway no longer provides the strong career path that it once did.¹⁶³ Most researchers subsist on short-term contracts (around three years) and need to frequently secure new funding to continue their research. As well as the professional challenges posed by this uncertainty, it also means that researchers often cannot access personal finance products like home loans that require proof of ongoing employment.¹⁶⁴ The continued decline in government research and development funding does not send an encouraging signal to students considering a research career.¹⁶⁵

156 Murdoch University, *Submission 25*, p. [4].

157 Australian Council of Deans of Agriculture, *Submission 36*, p. [3].

158 Mr Arthur Blewitt, AgriFood Skills Australia, *Committee Hansard*, 1 February 2012, p. 1.

159 Grains Research and Development Corporation, *Submission 43*, p. 3.

160 University of Adelaide, *Submission 22*, p. [4].

161 La Trobe University, *Submission 50*, p. 5; cf Professor Richard Roush, School of Land and Environment, University of Melbourne, *Committee Hansard*, 15 May 2012, p. 22.

162 The University of Western Australia, *Submission 16*, pp 2–3.

163 University of Tasmania, *Submission 21*, p. 1.

164 Australian Council of Deans of Agriculture, *Submission 36*, p. [3].

165 Ms Barbara Grey, *Submission 61*, p. [3].

3.124 Given the increasing number of post-graduate research students from overseas, it was put to the committee that more thought needs to be given on how to retain Australian-trained talent.¹⁶⁶ If, as currently suspected, most international post-graduate students return to their home countries, they are contributing their education and talents to the benefit of Australia's competitors. Encouraging those students to remain in Australia is one possible way of increasing the research talent pool and ensuring Australia maintains the research workforce it requires.

3.125 Climate change, corporatisation and technological innovation, among other developments, require the agricultural industries to be adaptable. The consequences of the skills shortage in trained researchers are felt across industry. It was put to the committee that one of the greatest impacts of a decline in agricultural researchers is in the ability of industry to adapt to changes quickly and efficiently. A declining number of agriculture graduates and education institutes has reduced the diversity of skills and knowledge at a time when agriculture is rapidly diversifying its outputs and processes.¹⁶⁷ At least one major research body argued that there was a direct link between decline in productivity growth and declining funding research.¹⁶⁸ The limited number of trained researchers also limits the ability of industry to undertake industry-funded research.¹⁶⁹

Extension Services

3.126 A recurrent theme throughout the inquiry was the impact of the decline of 'Extension' on agricultural practice. Extension refers to the practice of researchers presenting their findings to businesses and operators currently working in the field. Extension can include a variety of topics from new crop varieties to pasture improvement, livestock management, plant and animal disease control, sales and marketing.

3.127 The steady decline in funding for extension services was reported to the committee as having an enduring impact on the effectiveness of research and agricultural practices generally. With a limited extension network, research findings take significantly more time to reach and influence industry practices and provide productivity improvements.¹⁷⁰ The Birchip Cropping Group described the decline of extension as 'probably the largest skill gap in our current situation and likely to get significantly worse over the next 10 years.'¹⁷¹ It is estimated that at the present time Cooperative Research Centres – a Commonwealth Government initiative that supports end user driven research collaborations – have around \$100 million worth of research outcomes that have not been distributed to industry due to a lack of dissemination

166 University of Tasmania, *Submission 21*, p. 1.

167 Marcus Oldham College, *Submission 5*, attachment 1.

168 Grains Research and Development Corporation, *Submission 43*, p. 2.

169 The University of Western Australia, *Submission 16*, p. 3.

170 Grains Research and Development Corporation, *Submission 43*, p. 2.

171 Birchip Cropping Group, *Submission 62*, p. [3].

services.¹⁷² Echoing these sentiments, the University of Adelaide noted that: 'Extension of research is a critical factor in adoption of new findings and withdrawal of extension services has decreased the availability of independent advice.'¹⁷³

3.128 Due to the ever decreasing amount of extension work undertaken by state Departments of Agriculture and Primary Industries, universities and other research bodies, industry is increasingly turning to consultants to provide advice on new practices and products.¹⁷⁴ It is estimated by the GRDC that around 60 per cent of grain growers in Australia have a private consultant or advisor, and in most cases they will have more than one as they seek very specialised expertise. It was argued that this move towards private sector involvement can increase the rate of uptake of new technologies and practices as they are advocated by trusted partners.¹⁷⁵ However, there are concerns that the decline of extension services is breaking the link between researchers and practitioners, and making it harder for smaller enterprises to compete.

3.129 The committee believes that extension services play a important role in both improving productivity and also creating closer links between the farming industry and researchers and should be encouraged.

Recommendation 8

3.130 The committee recommends that the Australian Bureau of Agricultural and Resource Economics and Sciences undertakes an analysis of the decline of Extension services and the impact of this on the dissemination of research outcomes through productivity improvement to agriculture and agribusiness.

172 Mr Arthur Blewitt, AgriFood Skills Australia, *Committee Hansard*, 1 February 2012, p. 3.

173 University of Adelaide, *Submission 22*, p. [7].

174 Mr Wayne Cornish, Rural Skills Australia, *Committee Hansard*, 1 February 2012, p. 16.

175 Mr John Harvey, Grains Research and Development Corporation, *Committee Hansard*, 15 May 2012, p. 47.

CHAPTER 4

Conclusion

4.1 The preceding chapters have discussed the decline of agriculture and agribusiness education in Australia and the skills shortages that have developed as a result of an ageing workforce, competition from the mining industry, and the increasing disconnect between the consumer and the producer. Throughout the report, the committee has touched upon recommendations and solutions to problems that have been discussed. This chapter develops two key ideas that, if adopted and carried forward by industry and government, could help to secure the future of agriculture in Australia over the coming century: re-positing the narrative, and the development of a peak body representing agricultural production and agribusiness as a whole.

Re-writing the agricultural narrative

4.2 Recent years have seen an extraordinary growth in the awareness of food in our society as television programs such as the great popularity of *MasterChef*, *My Kitchen Rules*, *Kitchen Cabinet*, and *Heston's Feasts* demonstrates. Disappointingly, this renewed interest in preparation and consumption of food has not translated into a broader understanding of the production, processing, value adding, transporting or safe storage of foodstuffs; for the most part interest is focused on the plate, not the long value-chain of numerous industries stretching all the way back to the paddock.

4.3 Evidence presented to the committee was almost unanimous in advocating the need for industry to be more proactive about promoting itself as a critical national industry, and improving understanding of agriculture in the community.¹ Agriculture needs to portray itself as an industry of the future rather than one of the past – inspiring young people to make a difference to the world's challenges through food production and agribusiness-related industries.² If agriculture cannot create a positive perception of itself, warns author and journalist Professor Julian Cribb, '[agriculture] will not get those brilliant young Australians back into this field.'³

4.4 Witnesses identified that few Australians realise agriculture is one of Australia's few wealth producing industries and a significant export income earner for

1 Dr Damien Adcock, Northern Melbourne Institute of TAFE, *Committee Hansard*, 15 May 2012, p. 38.

2 Professor Terry Spithill, Department of Agricultural Sciences, La Trobe University, *Committee Hansard*, 26 March 2012, p. 64.

3 *Committee Hansard*, 15 May 2012, p. 52.

Australia, or that our farmers are amongst the most productive in the world on a per capita basis.⁴

4.5 To properly address the skills shortage that has developed, the industry needs to attract and retain more and better trained people. Attracting more people will reinvigorate education facilities, increase the research talent pool, and spread the word to more people that agriculture and agribusiness are exciting industries to be a part of. To do that, the industry has to make itself attractive by dispelling negative myths around farming especially, and create the link in the collective consciousness between food and fibre production, science, and security, highlighting the careers on offer, and emphasizing the multidisciplinary qualities of the entire sector. The committee considers that there is a need for the establishment of a peak body representing the key bodies involved in agricultural production and agribusiness to achieve this outcome.

4.6 Throughout this inquiry, the committee heard from stakeholders who repeated that negative images associated with agriculture need to be reversed. As was discussed earlier in this report, the importance of agriculture has either lost all meaning for most urban Australians, or it is associated with poorly paid, low skilled workers. As was argued to the committee:

...why would [students] want to come into [the industry] when every time they pick up a newspaper it is all doom and gloom: how tough it is, the long hours and all those sort of things, and that there is no money in it?⁵

4.7 The committee heard that many prospective students and workers consider living and working in non-metropolitan areas to involve hardship, and that those areas are considered to offer poor amenities, physical and cultural isolation and generally difficult conditions.⁶ Contrary to this view, regional areas and cities are often vibrant locations with many benefits over large cities including cheaper housing, low unemployment levels and high levels of community engagement. The committee heard that governments have a role in improving perceptions of rural lifestyles, and highlighting that the availability of many high quality services in most rural and regional areas.⁷

4.8 One means of repositioning the sector which received wide support was the suggestion to rename, or at least move away from historically loaded terms, specifically 'agriculture' in its presentation in urban communities. Agriculture, it was reported to the committee, is almost exclusively equated with negative aspects of

4 Primary Advocates Pty. Ltd., *Submission 20*, p. 4.

5 Mr John Henchy, Farm Machinery Dealers Association of Western Australia, *Committee Hansard*, 26 March 2012, p. 23.

6 Landmark Operations Limited, *Submission 27*, pp [1], [4]; Ricegrowers' Association of Australia and Ricegrowers' Limited, *Submission 58*, p. [6].

7 Birchip Cropping Group, *Submission 62*, p. [1].

farming and overlooks the bulk of the agribusiness sector.⁸ Tentative steps have already been taken on this journey, for example, the committee heard that ACDA had avoided the use of the term 'agriculture' in their agricultural careers website.⁹ Among those supporting the rebranding of agriculture include the President of the Muresk Old Collegians' Association¹⁰, Longerenong College¹¹, and the former-Food Industry Association of Western Australia (FIAWA).¹²

4.9 The committee can see merit in a rebranding exercise, which it considers would not only offer the opportunity to overcome some entrenched misconceptions, but would also provide an opportunity to reframe the debate through the concerted use of new and relevant terminology. One term put to the committee that has obvious advantages is the general term 'food sector'. As argued by Professor Julian Cribb: 'food relates to everybody. Everybody consumes it, it touches the lives of every individual.'¹³ The more specific 'food and fibre' was queried by Professor Cribb as too long, and Professor Roush noted that it might be beyond the current understanding of some students.¹⁴ In contrast, 'food' is a term that everyone understands, relates to, and encounters every day. It establishes a clear connection between the needs of each and every person and the sector which makes shows such as *MasterChef* possible.

4.10 Though obviously difficult, overcoming entrenched negative views and creating a new image for an industry is not an impossible task. The example of the mining industry was repeatedly cited as having been successful in portraying itself as both desirable and exciting, and having as a consequence overcome many of its recruiting difficulties.¹⁵ The University of Melbourne's Professor Richard Roush noted:

[T]he advertising around for the mining industry as a career path is quite striking. You do not see any reference in those to isolation, poor housing in

8 Professor Jim Pratley, Australian Council of Deans of Agriculture, *Committee Hansard*, 26 March 2012, p. 41.

9 Professor Richard Roush, School of Land and Environment, University of Melbourne, *Committee Hansard*, 15 May 2012, p. 25.

10 Mr Floyd Sullivan, *Committee Hansard*, 26 March 2012, p. 12.

11 Mr John Goldsmith, Longerenong College, *Committee Hansard*, 15 May 2012, p. 32.

12 Mr David Lock, Food Industry Association of Western Australia, *Committee Hansard*, 26 March 2012, p. 19.

13 Professor Julian Cribb, *Committee Hansard*, 15 May 2012, p. 55.

14 Professor Julian Cribb, *Committee Hansard*, 15 May 2012, p. 55; Professor Richard Roush, School of Land and Environment, University of Melbourne, *Committee Hansard*, 15 May 2012, p. 25.

15 Elders Limited, *Submission 55*, p. 2.

the bush or anything like that. These are problems, that by any stretch of the imagination, would be far greater than we are faced with for agriculture.¹⁶

4.11 La Trobe University similarly credited the ability of the mining industry to portray itself in a positive light as one of the keys to its ongoing success and support:

The mining council has those beautiful ads; there is one where a woman is sitting at a computer running trains all around Western Australia. It is a really high-tech job; she is doing all this dazzling stuff.¹⁷

4.12 The committee is mindful that, to a large extent, the success of such exercises relies heavily on the way they are conducted. For example, winemaking in Australia has been seen as interesting, respectable, challenging and profitable, resulting in indications of an oversupply of winemakers in Australia.¹⁸

4.13 Change cannot be expected to happen overnight as cultural shifts naturally take time, and negative perceptions of agriculture are seemingly rusted on to the Australian national psyche. At least one witness expressed the sentiment that if their grandchildren's views are different the initiative will have been successful.¹⁹

4.14 At the same time as agriculture creates a new narrative, it needs to reach out to students and existing workers. Students who are not aware of opportunities are in no position to pursue them. An increase in the marketing of agriculture and agribusiness opportunities to students was put to the committee of a way to attract additional students and workers to the sector.²⁰ Young people also choose careers with an eye towards future personal growth, not just the initial salary on offer.²¹ Therefore, it is necessary to articulate to prospective students the challenging and ever changing nature of agriculture if it is to be portrayed as an attractive career choice. As an initial suggestion, this might be achieved through enhanced career advice material, industry outreach, or greater prominence in the curriculum.

4.15 As noted in the previous chapter, many school students have little understanding of the career opportunities and paths available to them. Similarly, there is precious little information for those considering career changes or students from other disciplines. The committee has already made recommendations that will go some way to addressing this shortcoming, but it must be reinforced that industry needs

16 Professor Richard Roush, School of Land and Environment, University of Melbourne, *Committee Hansard*, 15 May 2012, p. 19.

17 Professor Terry Spithill, Department of Agricultural Sciences, La Trobe University, *Committee Hansard*, 26 March 2012, p. 67.

18 Professor Richard Roush, School of Land and Environment, University of Melbourne, *Committee Hansard*, 15 May 2012, p. 24.

19 Mr Ken Severson, *Committee Hansard*, 26 March 2012, p. 23.

20 Ms Barbara Grey, *Submission 61*, p. [2].

21 Mr Arthur Blewitt, AgriFood Skills Australia, *Committee Hansard*, 1 February 2012, p. 5.

to articulate pathways and career opportunities to prospective students and even existing workers if it hopes to overcome the present skills shortage.

4.16 The agriculture and agribusiness labour force, like all others, responds to incentives. Industry can improve its competitiveness through the provision and marketing of salary packages that include housing and other benefits.²² Often perks already exist, they are just poorly marketed to potential applicants. For example, the committee heard of farmers offering employees limited share farming arrangements as an incentive to remain with them in the industry.²³ It was suggested to the committee that a stronger emphasis on lifestyle benefits would help farming compete with industries with higher headline salaries.²⁴

A new peak body for agriculture

4.17 The committee received evidence that the voice of the agriculture and agribusiness sectors is currently fragmented. Evidence from Western Australia provides a taste of this fragmentation:

It is an extremely fractured industry. Even if you took the entire supply chain and just looked at food processing sector, it is extremely fragmented. In Western Australia we have two broad farmers' bodies: the PGA and the Western Australian Farmers Federation. Then we have industry bodies for every industry sector, WAPPA for the pork producers and another for the grains industry. I do not know how many there are. There may be 30 or 40 industry associations representing production and then there are the processing associations. It is extremely difficult to coordinate all of those.²⁵

4.18 Although there are a number of very large advocacy organisations such as the National Farmers' Federation, even these do not represent all groups within agriculture when considered as a whole.²⁶ It was argued to the committee that only through a united voice can the new narrative be advanced.²⁷

4.19 The committee was given some clue as to why this duplication has occurred, and also the consequence of it:

The strength that makes regional and rural people so good is also the fundamental weakness of what we have seen today. When they see a

22 Tasmanian Farmers and Graziers Association, *Submission 30*, p. 5.

23 Mr Arthur Blewitt, AgriFood Skills Australia, *Committee Hansard*, 1 February 2012, p. 5.

24 Mr Alan Fisher, Farm Machinery Dealers Association of Western Australia, *Committee Hansard*, 26 March 2012, p. 24.

25 Mr David Lock, Food Industry Association of Western Australia, *Committee Hansard*, 26 March 2012, p. 16.

26 Mr Ian Joseph, Agribusiness Council of Australia, *Committee Hansard*, 15 May 2012, p. 8.

27 Professor Jim Pratley, Australian Council of Deans of Agriculture, *Committee Hansard*, 26 March 2012, pp 42–43.

problem in the country, they get together rally, around, fix the problem and move on. That is a strength, but it is also a weakness. What happens is they form a group. A hundred kilometres down the road, if they also have the same problem, they form the same group. They keep wasting those resources. I see a peak body as the one that coordinates and shares what everyone is doing so that everybody does not waste their time, energy and effort anymore. They can share what is already going on. By coordinating those energies, the industry itself will move ahead and we will not have this fragmentation that we currently have. There is nothing wrong with the fragmentation except for the fact that it is wasting limited resources.²⁸

4.20 Among stakeholders, there was widespread support for the development of a new peak body to address the issues facing the industry. Representatives from the VET sector commented that it would be 'a good idea...a peak body that would look after agribusiness, agricultural education and those sorts of industries would be very good.'²⁹ This view was echoed by representatives of the higher education sector³⁰, as well as past and present representative bodies and industry.³¹

4.21 Although there was widespread support for the creation of a new peak body, the committee heard several visions regarding its potential structure and membership. La Trobe University recommended the establishment of the university-led Agriculture Tertiary Education Council (ATEC), following the model of the Minerals Tertiary Education Council, to spearhead efforts to increase agricultural education.³² Industry members would fund ATEC through subscriptions or levies on production.³³ The University of Melbourne argued that the formation of ATEC to increase funding for agricultural and agribusiness education was a promising idea.³⁴

4.22 Another peak-body model put to the committee is the Agribusiness Council of Australia (ACA) that was established in 2011 with the key goal of presenting a united voice for industry and addressing the skills shortage

28 Mr Ian Joseph, Agribusiness Council of Australia, *Committee Hansard*, 15 May 2012, p. 4.

29 Mr Gavin Drew, Northern Melbourne Institute of TAFE, *Committee Hansard*, 15 May 2012, p. 41.

30 Professor Jim Pratley, Australian Council of Deans of Agriculture, *Committee Hansard*, 26 March 2012, p. 42.

31 Mr David Lock, Food Industry Association of Western Australia, *Committee Hansard*, 26 March 2012, p. 17; Mr Ian Joseph, Agribusiness Council of Australia, *Committee Hansard*, 15 May 2012, p. 2.

32 Professor John Webb, Department of Agricultural Sciences, La Trobe University, *Committee Hansard*, 15 May 2012, p. 66.

33 Department of Agricultural Sciences, La Trobe University, *Submission 50*, p. 1.

34 Professor Richard Roush, School of Land and Environment, University of Melbourne, *Committee Hansard*, 15 May 2012, p. 19.

through encouraging more people into the profession and ensuring they have the appropriate training.³⁵ As the explained by ACA:

We are trying to make sure we coordinate the 4000-odd fragmented industry bodies, all doing very good work but none sharing best practice or their learnings. We find that we duplicate a lot of the work. So what we are going to do is achieve economies of scale...Fundamentally, the industry has to ask for one body and one voice so that governments know where to come and industry know where to go when they need something done with regard to change [what] has to happen within Australia.³⁶

4.23 The absence of a peak body that can pull together the food sector supply chain from paddock to plate has meant that each sector is advocating in isolation for its own interests. As well as duplicating efforts in important areas such as the creation of networks with universities and attracting workers, the duplication also minimises the ability of the industry to communicate with governments.

4.24 In contrast to the situation in the food sector, the minerals sector is represented – almost unanimously – by the Minerals Council of Australia (MCA). This has provided the minerals sector with the ability to persuasively express positions on public policy, and has provided governments with a central point of contact when consulting with industry regarding new policies. A strong peak body has also helped the minerals sector to partially address its need for labour. In 1999 the MCA established Minerals Tertiary Education Council (MTEC) to support the education of professionals for the minerals industry. Funded through subscriptions of MCA members, MTEC has provided over \$20 million of industry funds for the development and delivery of undergraduate and post-graduate programs in earth sciences, mining engineering and metallurgy across a network of university partners.³⁷

4.25 The positive role that can be played by a peak body in assisting with (and having influence over) the formation of public policy can be clearly demonstrated through the example of the development of the Australian Government's proposed National Food Plan. At present, the government will be required to consult with dozens of peak bodies representing individual sectors with their own requirements, solutions, and expectations. Providing governments with one peak body with the authority to speak for the farmer, the banker, the researcher, the truck driver, the exporter and the farm hand would facilitate public policy that is timely, grounded in real world experience, and supported by industry.

4.26 A successful peak body for agriculture and agribusiness must be able to represent the entire sector including finance, educators, primary producers, and associated agribusinesses. The concerns of agricultural finance might be different from primary producers, and the needs of primary producers might be different to

35 Agribusiness Council of Australia, *Submission 13*, pp 6, 8.

36 Mr Ian Joseph, Agribusiness Council of Australia, *Committee Hansard*, 15 May 2012, p. 2.

37 La Trobe University, *Submission 50*, pp. 7–8.

those of food processors. By including all the relevant sectors – and providing each with effective representation – the peak body would provide a means of formulating solutions to benefit the entire sector.

4.27 In order to be representative of the wishes of key stakeholders, the committee does not seek to be overly proscriptive in nominating a governance structure for the peak body. However, the committee considers it important that a new peak body's board of directors include representation from 10–12 key sectors including finance, primary production, and education and the chair to be elected from within the group.

4.28 The example of the MCA has shown the efficacy of a strong peak body that is recognised by government and industry as *the* peak body. The committee is of the hope that following this report a body of similar strength, resilience and impact will be formed in order to represent all elements of agriculture and agribusiness in order to address the many challenges highlighted throughout the preceding pages.

Recommendation 9

4.29 The committee recommends that the government facilitates the development of a national peak industry representative body for the agricultural production and agribusiness sectors.

Recommendation 10

4.30 The committee recommends that the government commits to regular consultation with the new peak body established in recommendation 9 regarding policy changes that impact upon agriculture and agribusiness.

Recommendation 11

4.31 The committee recommends that the new industry peak body develops and presents to government a national strategy for addressing the skills shortage, industry productivity, and food security.

Senator Chris Back
Chair

Senator Rachel Siewert

Senator Bridget McKenzie

Senator Sue Boyce

GOVERNMENT SENATORS' ADDITIONAL COMMENTS

1.1 Labor Senators support the findings and recommendations of the committee in general terms. However, Labor Senators have some misgivings about some of the evidence provided to the committee. Some of the evidence relied on in the majority report may have inadvertently been less than accurate and requires further scrutiny.

1.2 Labor Senators also note that the report has not comprehensively reflected the current position of the Government and has overlooked recent Government efforts which have sought to address some of the areas of concern that are contained within the majority report. It is therefore in the interest of the committee that this report makes note of certain Government initiatives that are relevant to the inquiry, as a matter of public record.

Providing skills and education to support growth

1.3 The Government recognises the importance of agriculture and agribusiness not only to the Australian community, but increasingly as a global issue. Ensuring that we have the skilled workers necessary to support this key industry is vital.

1.4 Through the Council of Australian Governments' Standing Council on Primary Industries' productivity agenda, the Australian Government is working with the states and territories on a 'Building Human Capital' project. The project will examine how primary industries agencies may be able to influence and address the significant issues facing the primary industries workforce. The key focus of the project will be to explore the agribusiness sector's brand and how their image can be used to develop workforce initiatives to attract and retain a future workforce that will support ongoing business and industry productivity.

1.5 In June 2012 Agrifood Skills Australia, one of eleven Australian Government-funded Industry Skills Councils, released its report *Disruption or evolution: The challenge facing agrifood's employers in a time of structural adjustment*. This report is the fifth annual report into the skills and training needs of the agrifood sector. The report identifies four areas for priority action:

- Attraction of new workers;
- Increasing skills levels across the workforce;
- Sharing widely the benefits of research, innovation and new technology; and
- Improving the retention and skills use of the existing workforce.

1.6 Many groups have recently studied various aspects of agriculture education and workforce needs including the Senate, the Chief Scientist, DAFF (through development of the National Food Plan), the Council of Australian Governments, the National Farmers Federation and the Business/Higher Education Round Table. The Government also recognises that industry and employer groups have an important role to play in this issue, and is supporting their efforts.

1.7 Funding of \$14.9 million will be provided to Agrifood Skills Australia over three years to 2014 to undertake its Industry Skills Council role. The funding will be used to address training, skills and workforce development needs of their industry sectors. The National Farmers' Federation (NFF) is also exploring agricultural education and skills issues in the development of their Blueprint for Australian Agriculture. In April 2012 Government announced that it will provide \$75 000 towards the Blueprint consultation to ensure that the views of young people in agriculture are captured in the plan. DAFF is providing a further \$75 000 of in-kind technical support from its Australian Bureau of Agricultural and Resource Economics and Sciences to assist the NFF in the development of the Blueprint.

1.8 On 19 April 2012, Minister Ludwig also announced that the National Rural Advisory Council will pursue a new work program from July 2012, which includes a focus on skills and the workforce planning capabilities of agricultural employers. The National Rural Advisory Council is an independent panel of farmers and industry experts that provides advice and information to the Minister for Agriculture, Fisheries and Forestry on a range of rural adjustment issues.

Attracting students to agriculture and agribusiness

1.9 The Gillard Government has invested in reaching out to school students to build interest in careers in agriculture and agribusiness and provided new opportunities for all Australian's to access vocational education and training, and higher education.

1.10 The cover of the 2012 *Job Guide* has an Australian Year of the Farmer theme. The *Job Guide* provides information on a range of occupations and their education and training pathways. The *Job Guide* is funded by the Department of Education, Employment and Workplace Relations (DEEWR) and is distributed annually to all Australian schools with Year 10 students ensuring every student has access to the *Job Guide*. The *Job Guide* is also distributed in small quantities to colleges with Year 11 and 12 students, to career advisers at all TAFEs and universities, as well as youth-focused Australian Government funded programs that provide career advice and support to Year 10 students.

1.11 There are a number of additional features throughout *Job Guide 2012* to highlight the agricultural industry, these include:

- A variety of employment profiles of opportunities within the agriculture industry. These opportunities are highlighted with the symbol of a tractor next to specific profiles indicating an 'agricultural job';

-
- A page on ‘Careers in Agriculture’ that answers a wide range of questions students may have including what constitutes an agricultural job; the accessibility of agricultural jobs regardless of whether you reside in the city or rural areas; what qualifications are required for a career in agriculture; what the future holds for jobs in agriculture and pathways available to find a career in the industry; and
 - A Rural Studies Bullseye which shows a selection of jobs in the industry and the four levels of education and training required for entry into specific jobs.

1.12 The *myfuture* website, available at www.myfuture.edu.au, also includes a range of career information and tools, including information on occupations in the agricultural industry. There is the potential for career resources developed by industry to be linked to the *myfuture* website. This would consequently make the information available to career practitioners, teachers, students and parents.

1.13 The Government also continues to work with key stakeholders, including the Primary Industries Education Foundation (PIEF) and the Australian Council of Deans of Agriculture (ACDA), to increase awareness of agricultural careers and education. The Department of Agriculture, Fisheries and Forestry (DAFF) is a founding member of PIEF. The government has committed a total of \$525 000 for DAFF’s membership of PIEF from 2008-09 to 2014-15. PIEF provides credible, relevant and factual information on all matters relating to agriculture, fisheries and forestry for Australia’s teachers, students and the community.

1.14 In 2011, ACDA established a comprehensive careers website for prospective students in agriculture. The project team worked with various bodies across the agriculture and education industry to develop a resource for education and training providers, prospective students, researchers and professionals to easily locate information on occupations, career pathways and education in agriculture and related fields. The resulting resource was the CareerHarvest website. The ACDA were able to develop this website with financial assistance from DAFF, through a Community Networks and Capacity Building grant. The ACDA received project funding of \$80 000 (GST exclusive) for the CareerHarvest website.

1.15 Through the former Diversity and Structural Adjustment Fund, the Australian Government provided \$3.6 million over 2009 to 2011 to the Primary Industry Centre for Science Education (PICSE). In June 2012 it was announced that PICSE would receive an additional \$125,000 in funding support from DAFF to support PICSE to develop strategies to encourage more young people to enter primary industries and associated research and agribusiness. PICSE has now established itself as an important body in collaborating with universities, schools, regional communities and local primary industries, to attract students into tertiary science and to increase the number of skilled professionals in science based primary industries.

1.16 DAFF also provided a further \$100 000 in project funding for PIEF in 2009-10 through the Community Networks and Capacity Building program. The funds

contributed to a stock-take of curriculum resources, networks and initiatives for school students and teachers, the development of a survey instrument to enable benchmarking of PIEF's activities, and a primary industries information website. In September 2011, PIEF made a submission to the Australian Curriculum, Assessment and Reporting Authority (ACARA) curriculum consultation process.

1.17 The Australian Government has worked in collaboration with the state and territory governments to develop Australia's first national curriculum. Australia's education ministers jointly established ACARA to develop that curriculum. In December 2010, all education ministers endorsed Australia's first national curriculum from Foundation to Year 10 in English, mathematics, science and history. The curriculum can be viewed at www.australiancurriculum.edu.au.

1.18 The next stage of ACARA's work involves the development of an Australian Curriculum in languages, geography and the arts. Phase three of the Australian Curriculum development process will include the learning areas of health and physical education, information and communication technology, design and technology, economics, business, and civics and citizenship. ACARA has determined, following consultation with key stakeholders, that agriculture and primary industries is to be included as a context for learning within the design and technology learning area.

Support for skills training

1.19 The National Workforce Development Fund is available to enterprises operating in all sectors where there is a current or emerging skills need, including the agriculture sector. Through the Fund, enterprises are able to increase their workforce capacity by providing existing workers and new workers with the opportunity to enhance their skill levels through formal training.

1.20 As at May 2012, 23 projects to the value of \$6.4 million in the agriculture sector have been approved for funding to train 1,177 learners. The Government has contributed \$3.6 million towards these projects, with enterprises contributing \$2.8 million.

1.21 A range of financial incentives are available to employers to encourage them to offer employment related opportunities through apprenticeships and traineeships that will encourage people to acquire and expand their working skills and, as a result, set themselves towards worthwhile careers.

1.22 Under the Australian Apprenticeships Incentives Program, employers of eligible Australian Apprentices at the Certificate III or IV level may attract commencement and completion incentives totalling up to \$4,000. Australian Apprentices at the Certificate II level may attract a \$1,250 commencement incentive for their employer. In 2010-11, over \$260 million was paid in standard incentives for apprentices undertaking training in regional areas. In addition, the Australian Apprenticeships Incentives Program also contains a range of special and additional incentives. To boost training in rural and regional Australia, the Government provides

a \$1,000 Rural and Regional Skills Shortage Incentive. In 2010-11 over \$26 million was provided under this incentive.

1.23 In addition to employer incentives, Australian Apprentices undertaking an Australian Apprenticeship in an agricultural or horticultural occupation may be eligible for personal benefits, such as the Tools For Your Trade payment initiative and Support for Adult Australian Apprenticeships. In 2010-11, over \$78 million was paid to eligible Australian Apprentices through the Tools For Your Trade initiative, and over \$36 million was paid to eligible Australian Apprentices (\$10 million) and employers (\$26 million) through the Support For Adult Australian Apprentices initiative.

Supporting agricultural and agribusiness education

1.24 Nationally, one-third of Australian universities offer places in agriculture-related courses at the undergraduate and postgraduate levels, with most universities offering related courses in business and science fields. From 1 January 2012, the Australian Government is funding Commonwealth supported places for all domestic students accepted into eligible bachelor degrees at public universities. The agriculture industry can use the increased flexibility offered by uncapping of demand to work with schools and universities to encourage students to study courses that meet the needs of the labour market.

1.25 Agriculture units of study receive the highest rate of Government funding (\$20 284 per Commonwealth Supported Place in 2012). The maximum student contribution in 2012 for agriculture units of study was \$8 050 for one equivalent full-time student load (EFTSL) which is the second highest student contribution band. Combined funding per EFTSL for universities can be up to \$28 334 per annum. Universities have the choice to charge less than the maximum student contribution and the flexibility to decide how that funding is allocated, including spending on activities or programs that would support the attraction of students to study agriculture.

Supporting regional students access higher education

1.26 The Government is making a major investment in higher education in regional Australia through a range of initiatives:

- The number of government funded student places in regional universities has increased from 62,600 in 2007 to an estimated 77,700 in 2012;
- In 2012, Australia's regionally headquartered universities will receive about \$1.6 billion in Commonwealth funding to support teaching, learning and research – an increase of 47% from 2007;
- Increasing regional loading to help universities overcome the higher costs of regional campuses has increased by \$110 million over four years, increasing funding to a total of \$249 million; and

- Over five years the Regional Priorities Round of the Education Investment Fund will deliver more than \$500 million to strengthen the infrastructure that supports regional students' participation in tertiary education.

1.27 The Australian Government has also delivered on its commitment to eliminate regional eligibility distinctions for Youth Allowance. From 1 January 2012, as part of a \$265 million package, inner regional students are able to access independent Youth Allowance under the same concessional arrangements as outer regional, remote and very remote.

1.28 The Government has increased to \$2000 both second- and third-year Relocation Scholarships payments for eligible regional university students required to live away from home. This represents a \$9000 increase in Relocation Scholarship payments for each of those years.

Senator Gavin Marshall

Deputy Chair

APPENDIX 1

SUBMISSIONS RECEIVED

Submission

| Number | Submitter |
|--------|---|
| 1 | Agriplacements Australia |
| 2 | The Crawford Fund |
| 3 | Ms Louise Draper-Sevenson |
| 4 | Primary Industry Centre for Science Education, University of Tasmania |
| 5 | Marcus Oldham College |
| 6 | Tocal College Advisory Council |
| 7 | RSPCA Australia |
| 8 | Isolated Children's Parents' Association of NSW |
| 9 | Western Australian Farmers Federation |
| 10 | NSW Farmers Association |
| 11 | Charles Sturt University |
| 12 | CropLife Australia |
| 13 | Agribusiness Council of Australia |
| 14 | Australian Wool Exchange Limited |
| 15 | Food Fibre and Timber Industries Training Council |
| 16 | The University of Western Australia |
| 17 | Regional Universities Network |

- 18 Farm Machinery Dealers Association of WA and the Regional
Manufacturers
- 19 Mr John Troughton
- 20 Primary Advocates Pty Ltd
- 21 School of Agricultural Science, University of Tasmania
- 22 School of Agriculture Food and Wine, The University of Adelaide
- 23 South Australian Farmers Federation
- 24 Isolated Children's Parents' Association
- 25 Murdoch University
- 26 Ecological Agricultural Australia Association
- 27 Landmark Operations ltd
- 28 NSW Department of Primary Industries
- 29 Professor Lindsay Falvey
- 30 Tasmanian Farmers and Graziers Association
- 31 Voiceless
- 32 Rural Skills Australia
- 33 AgForce Queensland
- 34 Animals' Angels
- 35 Mr Simon Emmott
- 36 Australian Council of Deans of Agriculture
- 37 Animals Australia
- 38 Mr Graeme Batten

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| 39 | Australian Veterinary Association |
| 40 | Department of Education, Employment and Workplace Relations |
| 41 | National Farmers' Federation |
| 42 | Skills Tasmania |
| 43 | Grains Research and Development Corporation |
| 44 | Grain Producers Australia |
| 45 | Primary Industries Training Advisory Council, Northern Territory |
| 46 | Barristers Animal Welfare Panel |
| 47 | Primary Industries Education Foundation |
| 48 | Ag Institute Australia |
| 49 | Grains Research and Development Corporation |
| 50 | Department of Agricultural Sciences, La Trobe University |
| 51 | Australian Centre for International Agricultural Research |
| 52 | AgriFood Skills Australia |
| 53 | Australian Academy of Technological Sciences and Engineering |
| 54 | Dairy Industry People Development Council |
| 55 | Elders |
| 56 | Australian Beef Industry Foundation |
| 57 | Department of Agriculture, Fisheries and Forestry |
| 58 | Ricegrowers' Association of Australia |
| 59 | The SOS Group |
| 60 | Cotton Australia |

- 61 Mrs Barbara Grey
- 62 Birchip Cropping Group
- 63 Skills Australia
- 64 Seafood Experience Australia
- 65 Mr Joe Garnham
- 66 Office of the Chief Scientist
- 67 Mr Peter Kramer
- 68 Agriculture Education
- 69 EcoNorfolk Foundation Inc

ADDITIONAL INFORMATION RECEIVED

- 1 Answers to questions on notice provided by Department Industry, Innovation, Science, Research and Tertiary Education on 13 March 2012.
- 2 Attachment A of answers to questions on notice provided by Department Industry, Innovation, Science, Research and Tertiary Education on 13 March 2012.
- 3 Attachment B of answers to questions on notice provided by Department Industry, Innovation, Science, Research and Tertiary Education on 13 March 2012.
- 4 Answer to question on notice provided by the National Farmers' Federation on 30 May 2012.
- 5 Answer to question on notice provided by the Dairy Industry People Development Council on 12 June 2012.

APPENDIX 2

WITNESSES WHO APPEARED BEFORE THE COMMITTEE

Canberra, 1 February 2012

BAIGENT, Mr Karl, Assistant Director, Policy Section, Policy and Analysis Branch, Higher Education Division, Department of Innovation, Industry, Science, Research and Tertiary Education

BLEWITT, Mr Arthur William, Chief Executive Officer, AgriFood Skills Australia

BLOOM, Mr Geoffrey Michael, Executive Director, Rural Skills Australia

CORNISH, Mr Wayne Alwyn, Chairman, Rural Skills Australia

DUGGAN, Mr Brian, Manager, Workplace Relations and Legal Affairs, National Farmers Federation

LEVERS, Mr Ron, Operations Manager, Grain Producers Australia

LINNEGAR, Mr Matt, Chief Executive Officer, National Farmers Federation

LIVINGSTONE, Dr Simon, Principal, Marcus Oldham College

MAILLER, Mr Pete, Chairman, Grain Producers Australia

SMYTH, Dr Barry, President, Australian Veterinary Association

STOCKWIN, Mr Ben, Executive Manager, Primary Industries Education Foundation

WARBURTON, Mr Mark, Higher Education Division, Department of Innovation, Industry, Science, Research and Tertiary Education

WHITE, Ms Linda, General Manager, Industry Workforce Branch, Department of Innovation, Industry, Science, Research and Tertiary Education

WILSON, Mr Robert, General Manager, AgriFood Skills Australia

Perth, 26 March 2012

ABBOTT, Professor Lynette Kay, Vice Dean, Faculty of Natural and Agricultural Sciences, The University of Western Australia

ARMSTRONG, Mr Brad, Project Manager, Food, Fibre and Timber Industries Training Council (WA) Inc.

BOUCHER-HASSELL, Mr Jean Philippe, Partner, Primary Advocates

DRAPER-SEVENSON, Ms Elwyn Louise, Private capacity

DUNCANSON, Mr Robert Roy, Partner, Primary Advocates

FAIRNIE, Dr Ian, Immediate Past President, Muresk Old Collegians' Association

FISHER, Mr Alan Douglas, President, Farm Machinery Dealers Association of Western Australia Inc. and Western Australia Regional Manufacturers Inc.

HENCHY, Mr John Watson, Executive Officer, Farm Machinery Dealers Association of Western Australia Inc. and Western Australia Regional Manufacturers Inc.

HUTCHINSON, Mr Bruce, Secretary, Muresk Old Collegians' Association

LOCK, Mr David Alexander, Past Chairman, Food Industry Association of Western Australia

MILLARD, Ms Adele, Board Member, Muresk Old Collegians' Association

MILLER, Associate Professor David Warren, Head of Department (Veterinary Biology and Biomedical Sciences), School of Veterinary and Biomedical Science, Murdoch University

PIESSE, Mr Brian, Vice-President, Muresk Old Collegians' Association

PRATLEY, Emeritus Professor James Edward, Secretary, Australian Council of Deans of Agriculture

RICHARDS, Mr Geoffrey John, Chair, Food, Fibre and Timber Industries Training Council (WA) Inc.

SEVENSON, Mr Kenneth Charles, Private capacity

SIDDIQUE, Professor Kadambot, Director, Institute of Agriculture, The University of Western Australia

SULLIVAN, Mr Floyd, President, Muresk Old Collegians' Association

Melbourne, 15 May 2012

ADCOCK, Dr Damien, Head of Department, Higher Education Primary Industries, Northern Melbourne Institute of TAFE

CRIBB, Mr Julian Hillary James, Private capacity

DREW, Mr Gavin, Lecturer, Northern Melbourne Institute of TAFE

GOLDSMITH, Mr John, General Manager, Longerenong College

HABGOOD, Mr Richard, Consultant, Dairy Industry People Development Council

HARVEY, Mr John, Managing Director, Grains Research and Development Corporation

JOSEPH, Mr Ian John, Chair, Agribusiness Council of Australia

MacLEAN, Ms Bronwen, Senior Program Manager, Research Programs, Grains Research and Development Corporation

RANDALL, Mr Robert, Acting Chief Executive Officer, Australian Curriculum, Assessment and Reporting Authority

ROUSH, Professor Richard Tyrone, University of Melbourne; and Chair, Australian Council of Deans of Agriculture

SALE, Dr Peter Wykeham Gurney, Associate Professor in Agricultural Science, Department of Agricultural Sciences, La Trobe University

SPITHILL, Professor Terry William, Professor and Head of Department, Department of Agricultural Sciences, La Trobe University

TANG, Professor Caixian, Lecturer, Soil Science, Department of Agricultural Sciences, La Trobe University

VILE, Mr Rodney, Executive Officer, Dairy Industry People Development Council

WEBB, Associate Professor John Allan, Department of Agricultural Sciences, La Trobe University