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SNAPSHOT OF

Australia's Agricultural Workforce

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This snapshot describes Australia's agricultural workforce, providing key information and statistics in one place. We cover where workers live, what sub-industries and occupations they work in, and the mobility and educational attainment of the workforce. The snapshot also describes the involvement of Indigenous people, people from culturally and linguistically diverse backgrounds, women and young people in the agricultural workforce.

Who are Australia's agricultural employees?

The agriculture industry in Australia includes a number of diverse sub-industries. This snapshot defines the agriculture industry as¹:

- sheep, beef cattle and grain farming
- fruit and tree nut growing
- dairy cattle farming
- mushroom and vegetable growing
- nursery and floriculture production
- other crop growing
- poultry farming
- deer farming
- other livestock farming.

In 2016, 228,372 people were directly employed in the agriculture industry, representing 2.2 per cent of all employed people in Australia. The number of people working in the agriculture industry increased by 4.1 per cent between 2011 and 2016.

Agriculture has linkages through the supply chain and interdependence on other sectors of the economy. When employment in food and beverage manufacturing, fibre manufacturing and wholesale trade is also considered, the wider workforce connected with agriculture is estimated at 466,625² in 2016.

The majority of agriculture industry employees live in rural and regional areas of eastern Australia (Map 1). In 2016, 82 per cent of agriculture industry employees lived outside a capital city. This is less than the figure of 85 per cent in 2011, indicating relative growth of the agricultural workforce in greater capital cities.

2016 Australian agricultural workforce



228,372 employed, up 4% since 2011



82% live in regional areas



5% lived overseas 5 years before



73% worked full-time



37% were an owner manager of an enterprise



32% were female



24% were under 35 years old



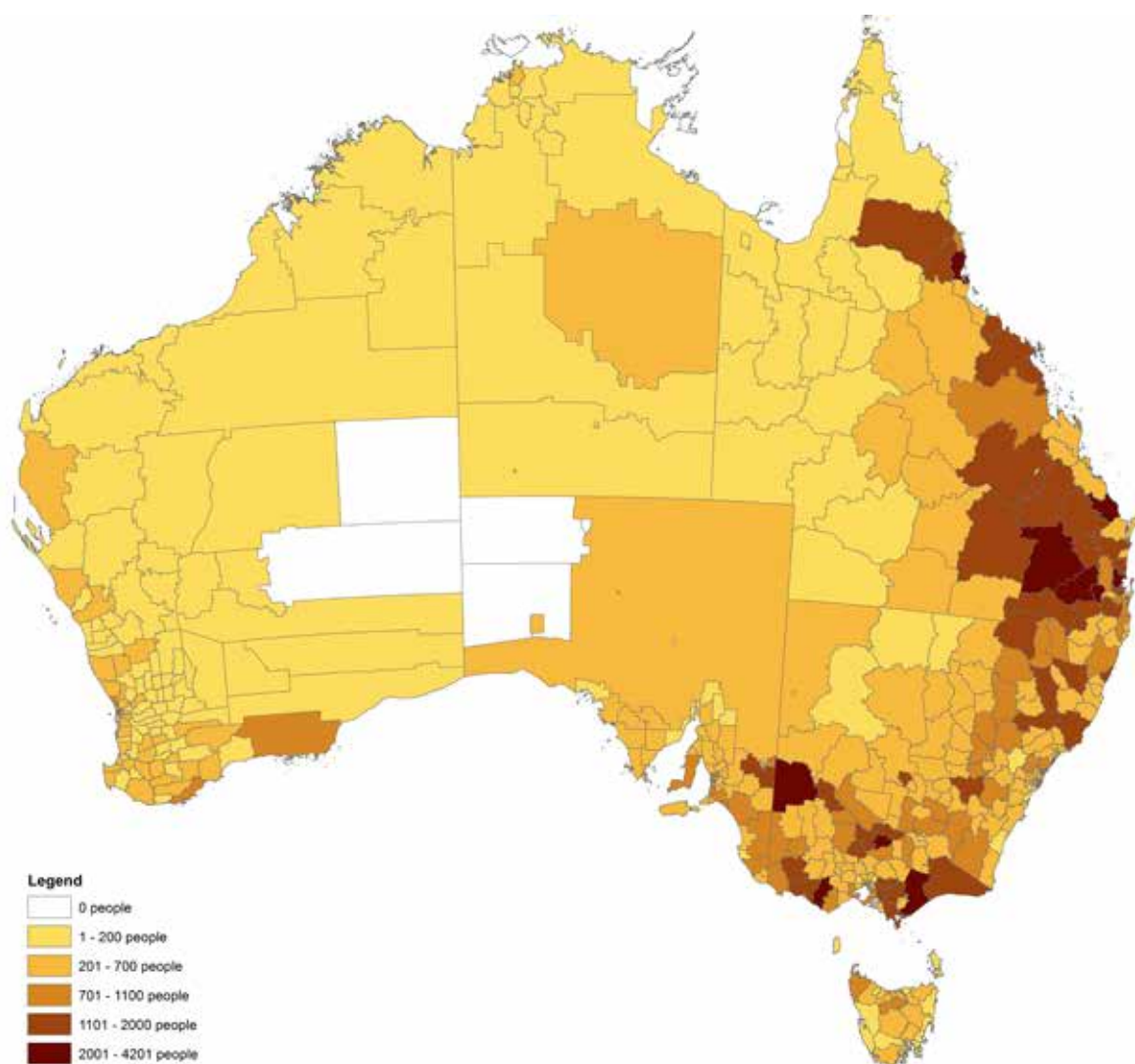
1% identified as Indigenous



APPROXIMATELY 11% were from culturally and linguistically diverse backgrounds

¹ Industry categories are classified by Australian Bureau of Statistics (ABS) using the Australian New Zealand Standard Industrial Classification (ANZSIC) 2006, Revision 1.

² ANZSIC industry classifications included in this figure are: Division 01 Agriculture; Subdivision 11 Food Product Manufacturing (except Group 112 Seafood Processing); Group 121 Beverage Manufacturing; Class 1312 Natural Textile Manufacturing; Class 1311 Wool Scouring; Class 1320 Leather Tanning, Fur Dressing and Leather Product Manufacturing; Group 331 Agricultural Product Wholesaling; Class 3602 Meat, Poultry and Smallgoods Wholesaling; Class 3603 Dairy Produce Wholesaling; and Class 3605 Fruit and Vegetable Wholesaling; Group 052 Agriculture and Fishing Support Services.



Note: Data incorporate employees in all agriculture industries and are presented by Local Government Area.
Source: ABS Census of Population and Housing

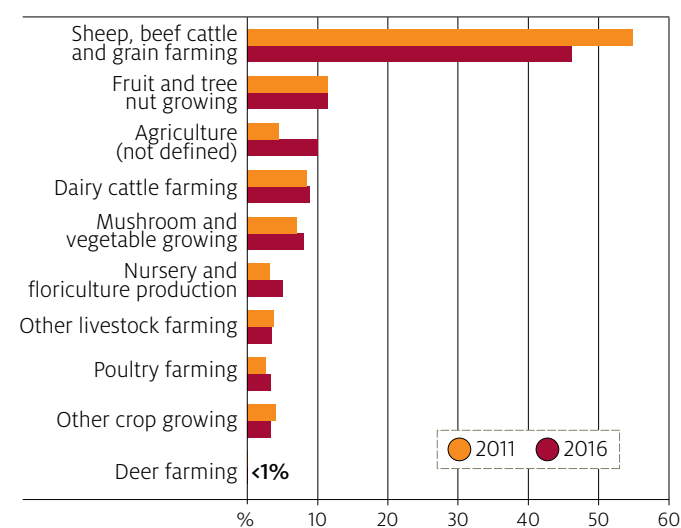
TABLE 1 Where people working in agriculture live

State	2006	2011	2016
New South Wales	70,242	61,919	62,565
Victoria	58,378	51,709	54,096
Queensland	54,176	48,864	52,738
South Australia	27,846	24,966	25,436
Western Australia	26,409	23,037	23,998
Tasmania	7,528	6,992	7,563
Northern Territory	1,644	1,501	1,483
Australian Capital Territory	379	275	468
Other Territories	3	0	28
Total	246,603	219,269	228,372

Sub-industry and occupation

In 2016, 46 per cent of all people working in agriculture were employed in sheep, beef cattle or grain farming, a smaller proportion than in 2011 (Figure 1).

FIGURE 1 Employment in agriculture sub-industries, 2011 and 2016



Source: ABS Census of Population and Housing

Most people who worked in agriculture in 2016 were employed as:

- managers (59 per cent; 132,955 people)
- labourers (25 per cent; 56,610 people), including livestock farm workers, crop farm workers and packers
- technicians and trades workers (4.5 per cent; 10,152 people), including nurserypersons, gardeners and shearers.

In 2016, 141,419³ people in Australia said that their occupation was a farmer or farm manager, a decline from 157,144 in 2011. Of these most were livestock farmers (47 per cent), crop farmers (28 per cent) and mixed crop and livestock farmers (16 per cent). Fifty five per cent of farmers and farm managers were owners of an enterprise and 26 per cent were contributing family members.

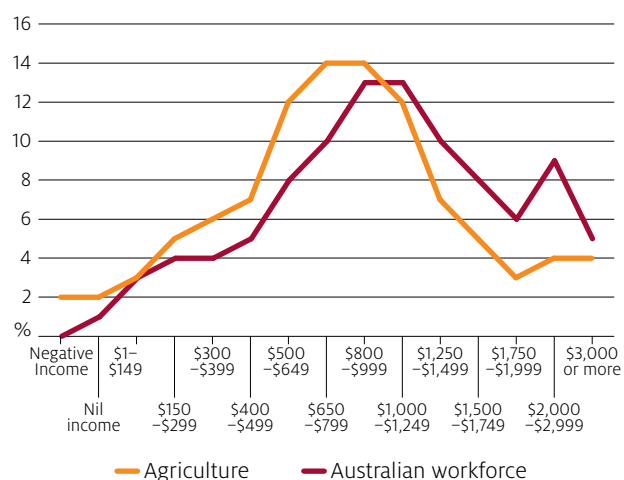
The median age of farmers and farm managers was 54 and 13 per cent were under 35 (see Young people section).

³ There were 14,705 people who said their occupation was a farmer or farm manager who were employed in other industries apart from agriculture, such as, food product manufacturing; agriculture, forestry and fishing support services, beverage and tobacco manufacturing; and basic material wholesaling.

Income and work status

In 2016, only 23 per cent of agriculture industry employees earned more than \$1,249 a week, compared to 38 per cent of the Australian workforce (Figure 2).

FIGURE 2 Distribution of income, 2016

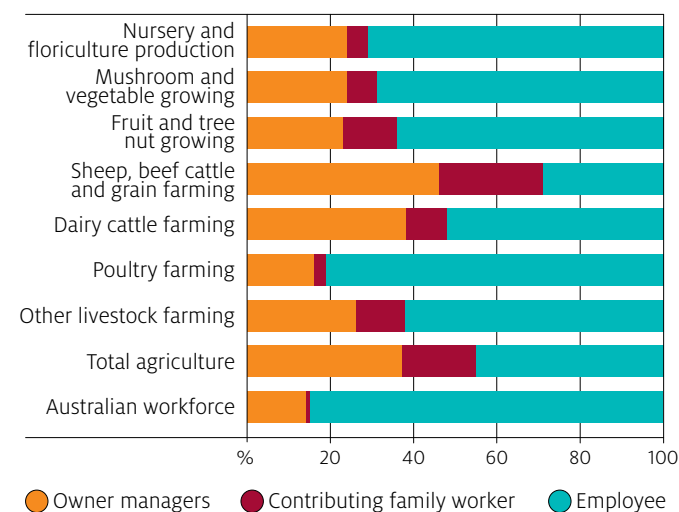


Source: ABS Census of Population and Housing

A greater proportion of agriculture industry employees (73 per cent) worked full time, compared with the general Australian workforce (65 per cent).

A larger proportion of the agricultural workforce were the owner manager of an enterprise, or worked as a contributing family member, compared with the general Australian workforce where a larger proportion were employees (Figure 3). Differences in employment status can be seen between agriculture sub-industries, for example, with vegetable growing and poultry farming having lower proportions of contributing family workers.

FIGURE 3 Employment status, 2016



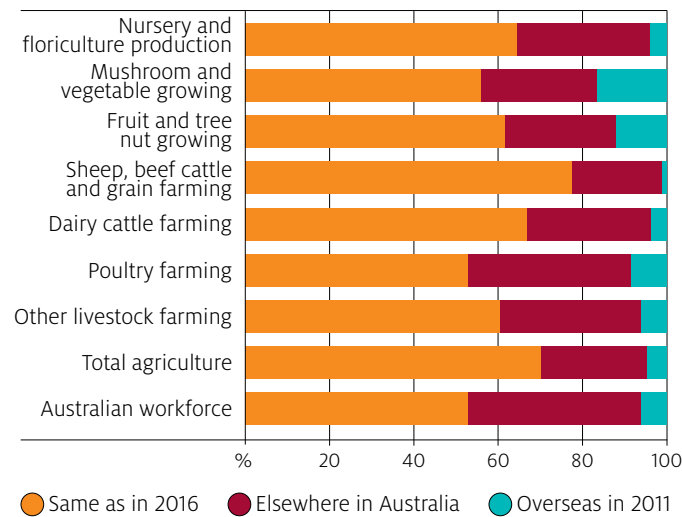
Note: Only selected agriculture sub-industries are shown. Owner managers of businesses with or without employees.

Source: ABS Census of Population and Housing

Mobility and migration

The mobility of the agricultural workforce is lower than other sectors, with 70 per cent of workers living at the same address in 2016 as five years earlier, compared with 53 per cent of the general workforce. Sub-industry differences are apparent with 17 per cent of those in mushroom and vegetable growing living overseas in 2011, compared with 1 per cent of those in sheep, beef cattle and grain farming and 5 per cent for all agriculture (Figure 4).

FIGURE 4 Usual address 5 years ago, 2016



Note: Only selected agriculture sub-industries are shown. People living overseas in 2011 also includes people who were born in Australia.
Source: ABS Census of Population and Housing

Education

Agriculture industry employees tend to have lower levels of formal education than the general Australian workforce (Table 2). In 2016, 45 per cent of agriculture industry workers held a non-school qualification, which in most cases was a certificate level qualification. In 2016, 45 per cent of the agricultural workforce had completed year 12 or equivalent, compared with 67 per cent of the Australian workforce.

TABLE 2 Comparison of completed formal qualifications, 2016

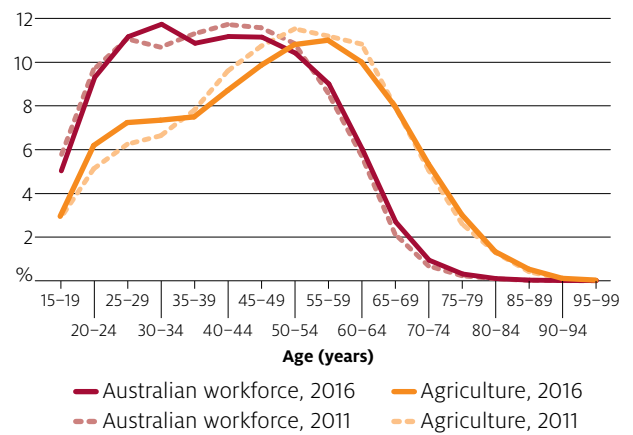
Qualification	% of agricultural workforce	% of Australian workforce
Postgraduate Degree Level	2	7
Graduate Diploma and Graduate Certificate Level	1	3
Bachelor Degree Level	10	22
Advanced Diploma and Diploma Level	9	11
Certificate Level	23	24
No recognised non-school qualification	55	33

Source: ABS Census of Population and Housing.

Age

The median age of agriculture industry workers was 49 years, compared to 50 in 2011 (Figure 5). While this is older than the median age of the general Australian workforce (40 years in 2016), it indicates the agricultural workforce overall is becoming slightly younger. The proportion of agricultural workers under 35 increased between 2011 and 2016, from 21 to 24 per cent.

FIGURE 5 Age distribution of agricultural workforce and general Australian workforce, 2011 to 2016

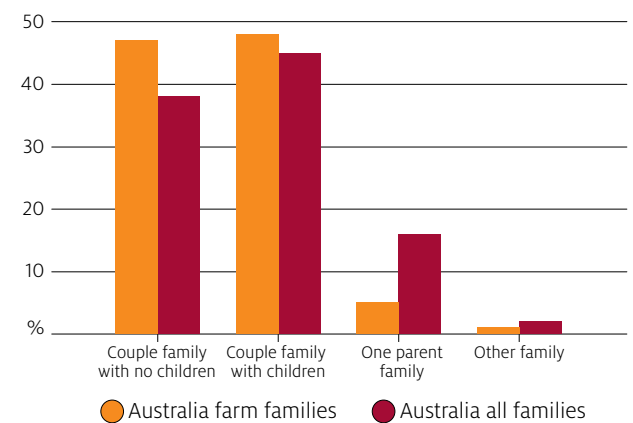


Source: ABS Census of Population and Housing

Farming families

Farming families can be defined as families where at least one person is a farmer or farm manager. In 2016, there were 87,325 farming families and 47 per cent of these were a couple without children, compared with 38 per cent for all Australian families. This indicates that many farming families are likely to have older children no longer living at home. One parent farming families are relatively uncommon (5 per cent) compared to one parent families for Australia (16 per cent) (Figure 6).

FIGURE 6 Farm family household composition, 2016



Note: Other family includes groups of related individuals such as brothers and sisters where there is no couple or parent child relationship.
Source: ABS Census of Population and Housing

Indigenous people in the agriculture industry

The term 'Indigenous' refers to both Aboriginal and Torres Strait Islanders. An Indigenous person is someone who (AIATSIS 2018):

- is of Aboriginal or Torres Strait Islander descent
- identifies as being of Aboriginal or Torres Strait Islander origin, and
- is accepted as such by the Indigenous community with which the person associates.

Indigenous agricultural employees

In 2016, one per cent of people directly employed in the agriculture industry identified as Indigenous (3,278 people). In 2016, 23 per cent of Indigenous agriculture industry employees were women compared with 32 per cent for non-Indigenous agricultural employees, a similar proportion to 2011.

Indigenous employees tended to be younger than other agriculture industry workers. In 2016, the median age of Indigenous agriculture industry workers was 37 years, compared with 49 years for the entire agriculture industry. Young Indigenous people (aged from 15 to 34 years, inclusive) accounted for 44 per cent of the Indigenous people employed in the agriculture industry.

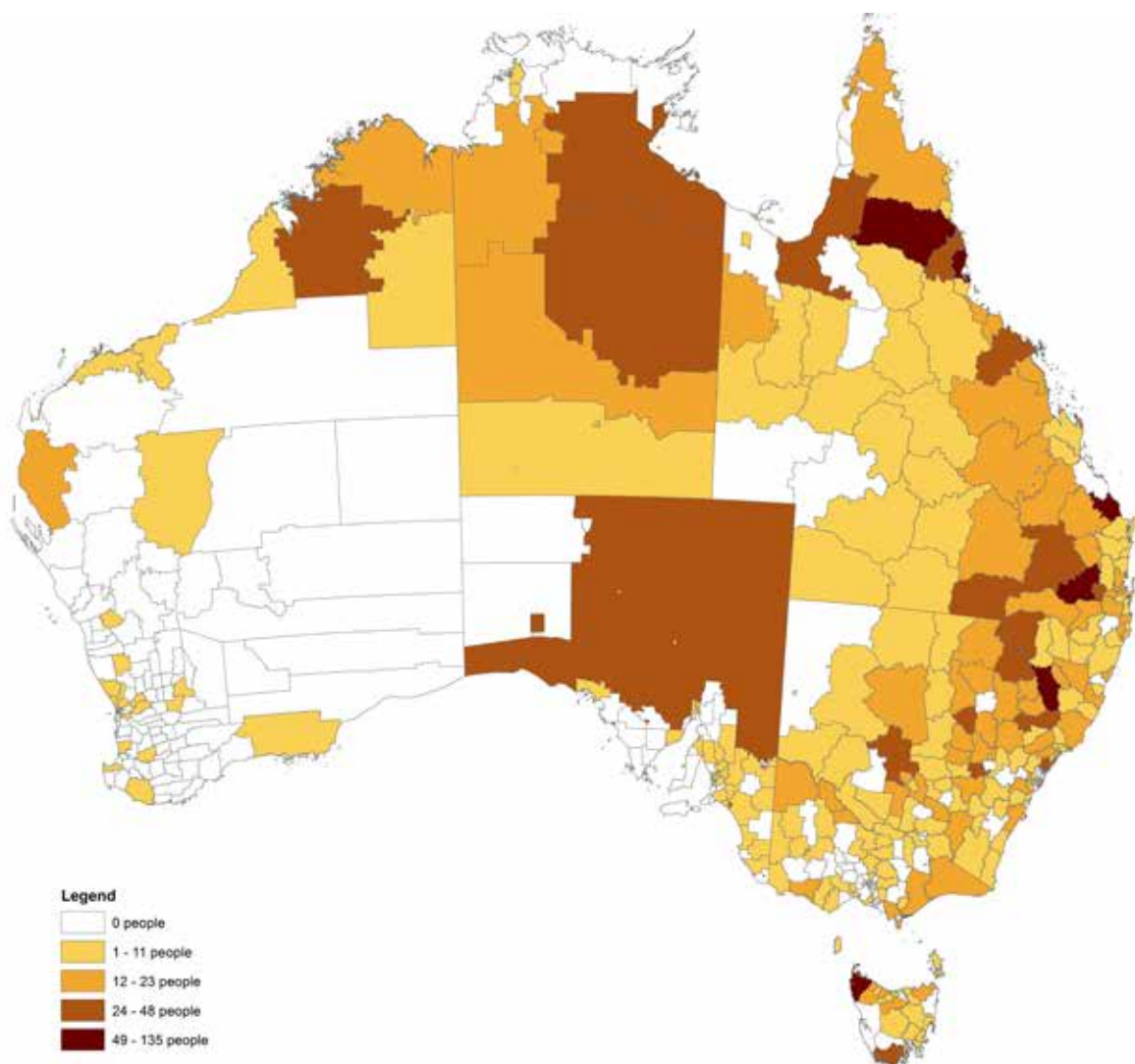
Location of employees

In 2016, 67 per cent of Indigenous people in Australia lived in regional and remote areas. As can be seen in Map 2, a relatively large number of Indigenous people working in the agriculture industry live in Queensland, Northern Territory, the north of Western Australia and South Australia.

Sub-industry and occupation

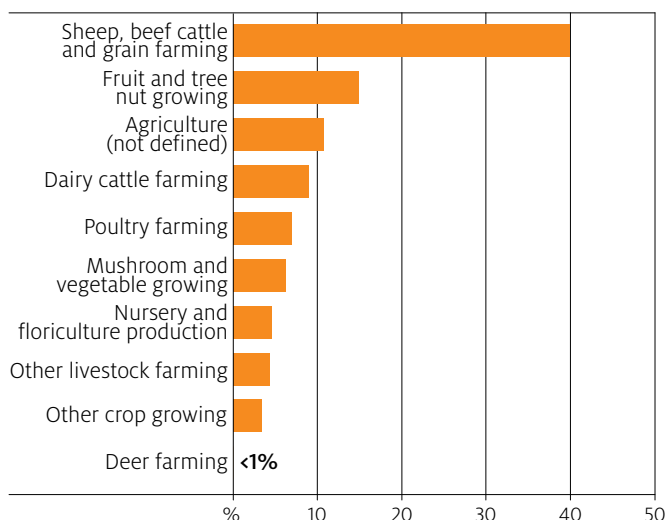
Almost 40 per cent of the Indigenous people who worked in the agriculture industry in 2016 worked in sheep, beef cattle and grain farming (Figure 7).

MAP 2 Place of residence of Indigenous agricultural workforce, 2016



Note: Data incorporate Indigenous employees in all agriculture industries and are presented by Local Government Area.
Source: ABS Census of Population and Housing

FIGURE 7 Indigenous employment in agriculture sub-industries, 2016



Source: ABS Census of Population and Housing

Indigenous people make significant contributions to agriculture that are not captured by official statistics. One area in particular is the burgeoning ‘bush foods’ sub-industry, which includes the production of finger lime, lemon myrtle leaves, wattleseed, Kakadu plum, Davidson plum, bush tomato, quandongs and ribberries (RIRDC 2014; ANFB 2018; Honan and McCarthy 2017; Burton 2018). Indigenous people are involved at all stages of bush foods production, from wild harvest and cultivation of native produce, through to food processing and cultural tourism that shares bush food knowledge (CSIRO 2005).

Most Indigenous agriculture industry workers were employed as:

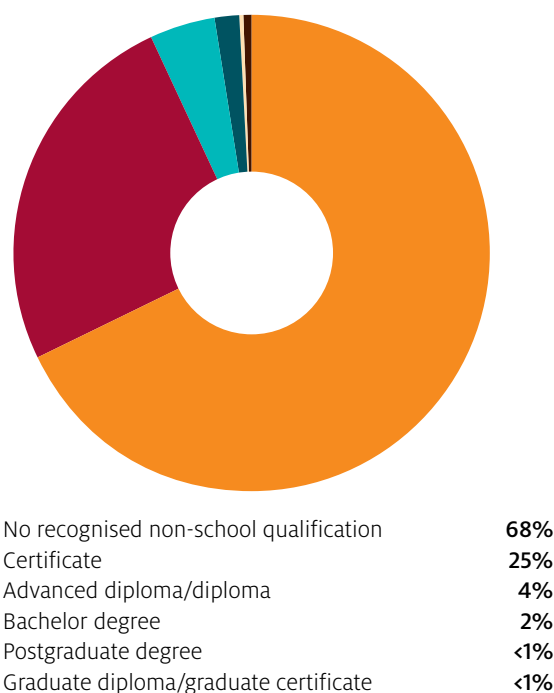
- labourers (53 per cent; 1,731 people), or
- managers (26 per cent; 850 people).

Between 2011 and 2016, the number of Indigenous managers increased by 18 per cent (129 people).

Education

Indigenous agriculture industry employees tend to have lower levels of formal education than all employees in the agriculture industry. In 2016, approximately 28 per cent of Indigenous agriculture industry workers indicated they had completed year 12 or equivalent. Thirty two per cent of Indigenous agriculture industry employees had completed non-school education, most of whom held certificate level qualifications (Figure 8). This compares to 25 per cent who had non-school qualifications in 2011. Low levels of formal education may explain why Indigenous people hold fewer management level positions in the agriculture industry (Prime Minister’s Report 2012).

FIGURE 8 Educational attainment of Indigenous agriculture industry employees, 2016



Source: ABS Census of Population and Housing

People from CALD backgrounds in the agriculture industry

A person from a Culturally and Linguistically Diverse (CALD) background is someone who identifies ‘...as having a cultural or linguistic affiliation by virtue of their place of birth, ancestry, ethnic origin, religion, preferred language(s) spoken at home, or because of their parents’ identification on a similar basis’.⁴

It is a personal judgement whether people identify themselves as being from a CALD background. This snapshot uses ‘language spoken at home’ as an indicator of a CALD background⁵. This method captures both first and second generation Australians.

Agriculture industry employees from CALD backgrounds

People from CALD backgrounds represented approximately 11 per cent (25,205⁶ people) of all agriculture industry employees in 2016. This is up from nine per cent (18,699 people) in 2011. Immigrant communities have played a central role in the development of Australia’s agricultural sector especially in horticulture, filling labour shortages, bringing new agricultural commodities and practices, innovation and knowledge transfer (Collins et al. 2016).

Official statistics are likely to underestimate the contribution of some temporary agricultural workers such as Working Holiday Makers, skilled workers on 457 Visas and seasonal workers such as Pacific Island Seasonal Workers, because:

- they are not in-scope for data collections such as the Census of Population and Housing
- they may be unable to complete data collection forms because of language and literacy barriers
- or may not be identified in official records because of their undocumented status (Underhill and Rimmer 2016).

ABS data show that in 2016, women from CALD backgrounds:

- represented 41 per cent of all CALD people employed in agriculture
- represented 16 per cent of all women employed in agriculture, up from 10 per cent in 2011
- were more likely to be employed as labourers (55 per cent) than non-CALD women (27 per cent).

The most common languages spoken at home by agriculture industry employees from CALD backgrounds in 2016 were:

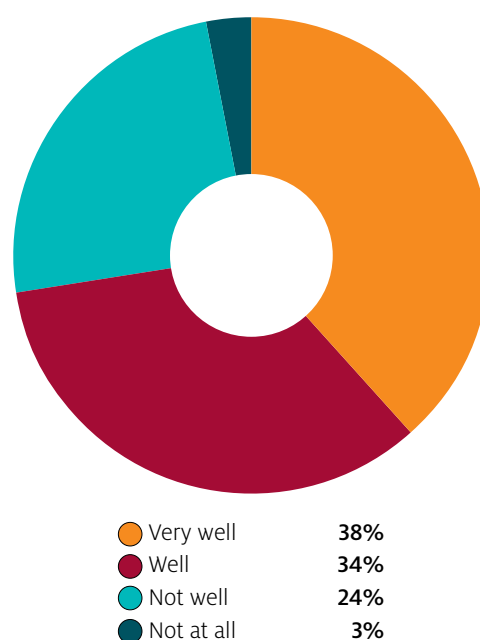
- Chinese (17 per cent)
- Mon-Khmer (14 per cent)
- Indo-Aryan (12 per cent)
- Italian (11 per cent).

This sees a significant change from 2011 when those speaking Italian made up 18 per cent of CALD agriculture industry employees.

English proficiency

In 2016, most agriculture industry employees from CALD backgrounds were proficient in English, with 72 per cent of workers reporting that they spoke English well or very well (Figure 9). Further, CALD persons in the agriculture industry may not be literate in their native language, which can affect their ability to access written information in their native language about, for example, the agriculture industry, natural resource management, business management, regulations and employment opportunities.

FIGURE 9 CALD agricultural workforce proficiency in English, 2016



Note: Totals may not add to 100 due to rounding.
Source: ABS Census of Population and Housing

4 Victorian Multicultural Strategy Unit (2002) in (Australian Psychological Society Ltd 2008, p.1)

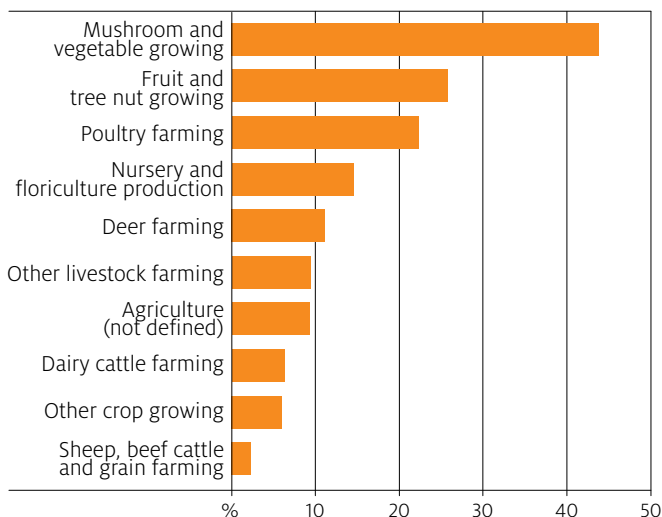
5 Based on the 2016 Census question ‘Does the person speak a language other than English at home?’

6 This includes Indigenous Australian language speakers.

Sub-industry and occupation

CALD employees were most represented in horticulture and specifically mushroom and vegetable growing, fruit and tree nut growing and poultry farming, where they made up 44 per cent, 26 per cent and 22 per cent respectively of all agricultural employees in these sub-industries (Figure 10).

FIGURE 10 CALD persons representation in agriculture sub-industries, 2016



Source: ABS Census of Population and Housing

In 2016, the majority (71 per cent) of agricultural workers from CALD backgrounds were employees, 20 per cent were owner managers of an incorporated or unincorporated enterprise, while 9 per cent were contributing family workers.

The majority of CALD persons working in the agriculture industry were (Figure 11):

- labourers (45 per cent; 11,258 people), or
- managers (40 per cent; 9,910 people).

Research indicates that employees from CALD backgrounds are generally involved in decision-making roles at the farm level but are not well represented at the industry level (Kancans et al. 2010). Representation in decision-making roles can differ according to time of migration (new or late arrivals) and generation (first or second) (Kancans et al. 2010).

FIGURE 11 CALD agricultural workforce occupations, 2016

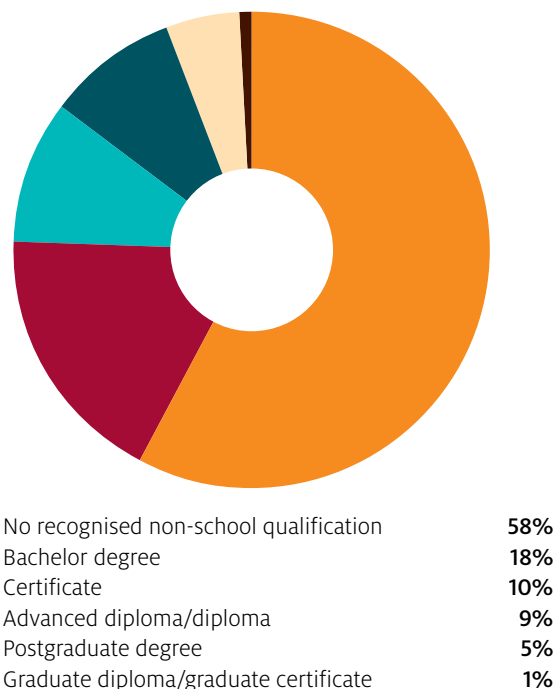


Source: ABS Census of Population and Housing

Education

In 2016, 42 per cent of CALD people who worked in the agriculture industry had a certificate level or higher qualification, which is an increase from 34 per cent in 2011. This is slightly lower than the agriculture industry average of 45 per cent.

FIGURE 12 CALD agricultural workforce educational attainment, 2016



Note: Totals may not add to 100 due to rounding.

Source: ABS Census of Population and Housing

Age

In 2016, CALD employees tended to be younger than other agriculture industry workers. The median age of agriculture industry workers from CALD backgrounds was 38 years, compared with 49 years for the entire agriculture industry.

Women in the agriculture industry

Agriculture has been largely dominated by male workers according to Census data. However, the nature of family-farm agricultural production is that women make significant yet often unrecognised paid and unpaid contributions to agricultural businesses and communities (Alston 2000).

Women agricultural employees

In 2016, the number of women recorded as working in the agriculture industry was 72,722 (32 per cent of the workforce), up from 68,514 in 2011. This occurred in the context of an expanding overall agricultural workforce, which increased by 9,103 workers between 2011 and 2016.

Women contribute to the agriculture industry in different ways:

- **On-farm income:** in 2005–06 it was estimated that women contributed \$8,558 million to the agriculture industry in on-farm income (RIRDC 2009). This was 33 per cent of all on-farm income.
- **Off-farm income:** in 2005–06 it was estimated that women provided 84 per cent of all off-farm income (RIRDC 2009). In dollar terms, this equated to \$2,715 million (ABARE 2007).

Women working in agriculture also contribute to:

- **Household work:** 75 per cent of women working in agriculture indicated they did five or more hours unpaid domestic work in the week leading up to the Census. This is 13 per cent more than the national figure for all women of 62 per cent.
- **Volunteer and community work:** 37 per cent of women working in agriculture indicated that they are involved in volunteer activities. This is substantially more than the national average for all women of 23 per cent. The national figure for all adults involved in volunteering activities was 21 per cent.

Women also play a crucial role in farm diversification, for example, in agritourism ventures with serviced accommodation (Medhurst and Segrave 2007; Ecker 2010).

Sub-industry and occupation

Women made up 28 per cent of all managers in the agriculture industry in 2016, with about half the women in agriculture working as managers (Figure 13). However, the number of women managers in agriculture decreased between 2011 (41,982 women managers) and 2016 (37,787 women managers).

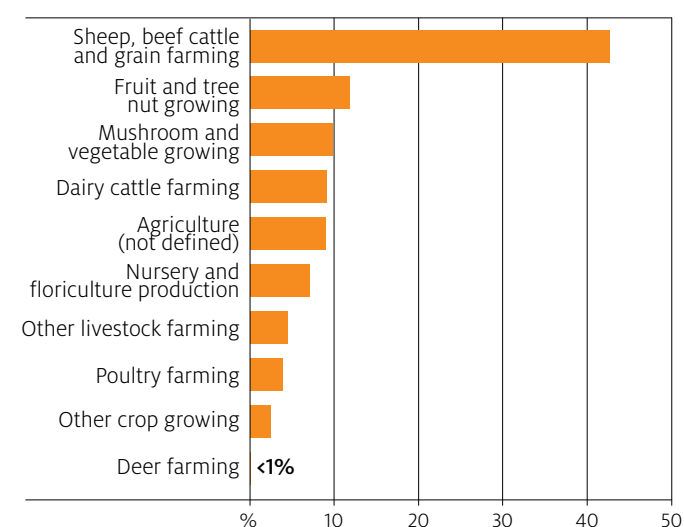
FIGURE 13 Occupation of female agriculture industry employees, 2016



Source: ABS Census of Population and Housing

Forty three per cent of women working in the agriculture industry worked in sheep, beef cattle and grain farming (Figure 14). This is similar to the proportion for all people who work in the agriculture industry. Women represented 29 per cent of the sheep, beef cattle and grain farming workforce (Figure 15).

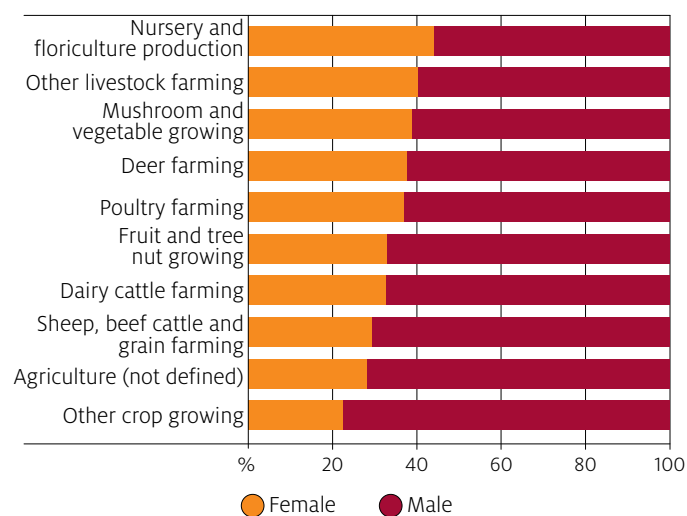
FIGURE 14 Sub-industry employment of female agriculture industry employees, 2016



Source: ABS Census of Population and Housing

Women represented 44 per cent of the total workforce in nursery and floriculture production and 40 per cent of all people who worked in other livestock farming (Figure 15).

FIGURE 15 Gender representation in agriculture sub-industries, 2016

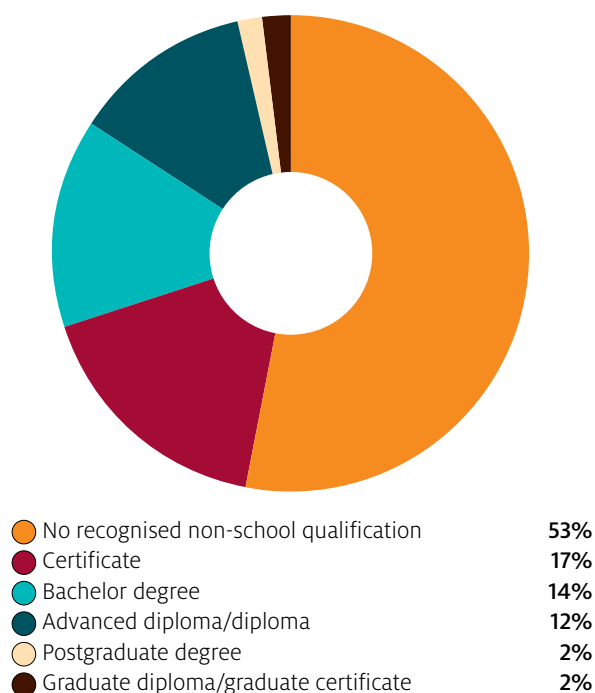


Source: ABS Census of Population and Housing

Education

In 2016, the percentage of women working in the agriculture industry with a non-school qualification was 47 per cent (Figure 16). This is above the industry average of 45 per cent.

FIGURE 16 Educational attainment of women working in the agriculture industry, 2016



Source: ABS Census of Population and Housing

There is an emerging trend where an increasing number of women are achieving qualifications in agriculture, including agricultural science, animal husbandry and wool science. In 2011, there were 22,310 women who had completed a non-school qualification in agriculture. This had increased to 27,384 by 2016, which is an increase of 23 per cent over 5 years. This compares with an increase of 8 per cent for men holding non-school qualifications in agriculture over the same period.

Age

The largest proportion of women working in the agriculture industry in 2016 were aged between 55 and 59 years, while the median age of women in the industry was 49 years. Young women (aged from 15 to 34 years) accounted for 23 per cent of women in the agricultural workforce, while 16 per cent of women were over the age of 65.

Young people in the agriculture industry

In this snapshot, young people are defined as those aged from 15 to 34 years. The contribution of young people to the agriculture industry either through paid or unpaid work, is central to an innovative and sustainable future for agriculture.

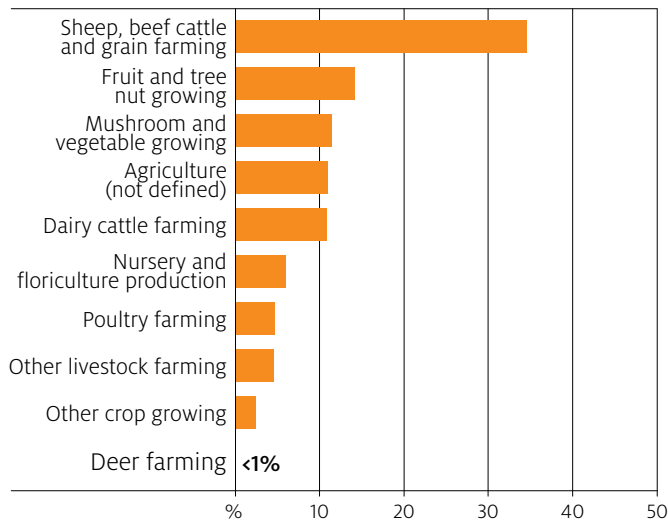
Young agricultural employees

Young people accounted for 24 per cent (54,197 people) of the total agricultural workforce in 2016, compared with 21 per cent in 2011. Thirty per cent of young agricultural employees were women (compared with 28 per cent in 2011). In the total Australian workforce, the proportion of people aged from 15 to 34 was 37 per cent.

Sub-industry and occupation

More young agricultural employees (35 per cent) worked in sheep, beef cattle and grain farming than any other sub-industry in 2016 (Figure 17). This compares with 46 per cent of all agricultural employees who worked in this sub-industry.

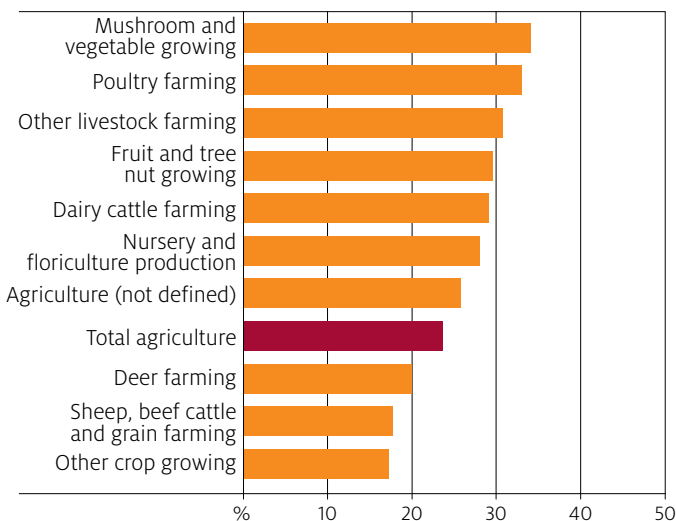
FIGURE 17 Young people in agriculture sub-industries as a percentage of all young people in the agricultural workforce, 2016



Source: ABS Census of Population and Housing

The mushroom and vegetable growing sub-industry had the highest proportion of young people, with 6,249 young employees representing 34 per cent of all people who work in this sub-industry (Figure 18). Similarly, the 2,571 young employees who work in poultry farming represented 33 per cent of all people who work in this sub-industry.

FIGURE 18 Representation of young people in agriculture sub-industries, 2016



Note: This chart shows the proportion of young people as a share of the total workforce for each sub-industry.

Source: ABS Census of Population and Housing

Most young agricultural employees work as:

- Labourers (48 per cent; 25,874 people), or
- Managers (31 per cent; 16,794 people)

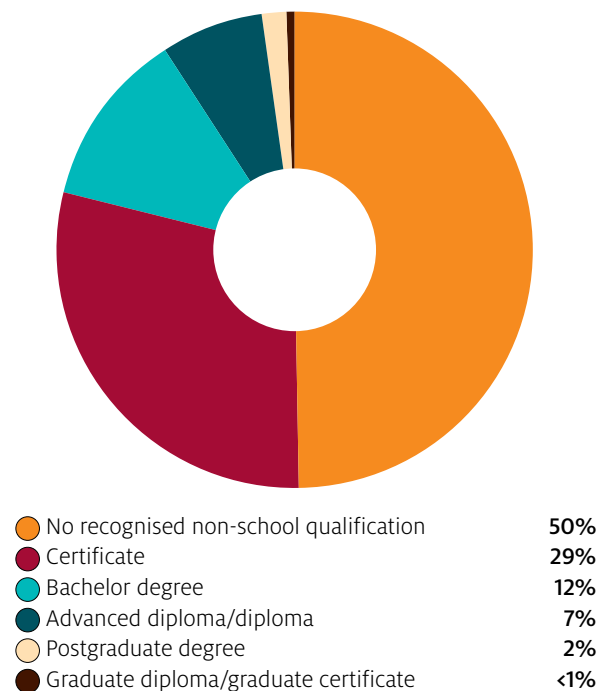
Of the total 141,419 people employed as a farmer or farm manager, 18,330 (13 per cent) were young (15 to 34 years), the same proportion as in 2011. Of young farmers, the proportion who were female increased from 20 per cent in 2011, to 21 per cent in 2016.

In 2016, a significant number of people (40,069 persons) worked as contributing family members in the agriculture industry, including 3,491 people who were aged 34 years or less (9 per cent of total contributing family workers).

Education

In 2016, 50 per cent of young agriculture industry employees had a non-school certificate level or higher qualifications (Figure 19). This is higher than the industry average of 45 per cent.

FIGURE 19 Educational attainment of young people working in the agriculture industry, 2016



Source: ABS Census of Population and Housing

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About this paper

The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) has developed this Snapshot to inform policy and decision makers about the workforce characteristics and diversity of people and communities that contribute to Australian agriculture.

Unless otherwise specified, this snapshot uses data from the 2011 and 2016 Australian Bureau of Statistics' Census of Population and Housing. For further information, or for assistance interpreting these statistics, please contact ABARES.

ABOUT THE AUTHOR

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Bill Binks is a social researcher in ABARES, currently leading projects on the human dimensions of agriculture, fisheries and forestry industries and how the Australian agricultural labour force has changed and can be expected to change over time. His previous research examined labour productivity and employer experiences with seasonal workers and working holiday makers in Australian horticulture; wild dog management approaches used by landholders and regional groups; community participation in biosecurity pest reporting; and drivers of regional agritourism and food tourism.

ABOUT THE AUTHOR

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Rob Kancans is currently the acting Director of ABARES Invasive Species and Social Sciences section. A human geographer at heart he has led and contributed to a wide variety of social research projects across various aspects of agriculture, fisheries, forestry and natural resource management in Australia including; social impact assessment of the Commonwealth marine Reserves network, landholder perceptions of climate change, social impacts of drought in Australia, community vulnerability and adaptive capacity to changes in access to water in the MDB and drivers of practice change in Australian agriculture.

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Dr Nyree Stenekes is a social scientist in ABARES, currently working on Australia's diverse agricultural workforce. Her other research examines various aspects of people in agriculture and fisheries, including social networking analysis of biosecurity policy and stakeholder groups; effectiveness of pest and weed management strategies used by landholders; and voluntary uptake of boat cleaning actions by recreational boat operators in Australia to minimise marine pest risks.

ABOUT THE AUTHOR

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Dr Heleen Kruger is a social scientist in ABARES. She has been investigating the social and institutional aspects of Australian agriculture for more than 10 years, including projects on community engagement, social networks, labour productivity, the social impacts of emergency disease outbreaks, area-wide management of pests and agricultural innovation systems.

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