



2013 Dairy People Factfinder

Second Edition

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The 2013 Dairy People Factfinder is an evidence-based information resource about the people who work in the dairy industry, predominately those on dairy farms and in dairy product manufacturing. The Second Edition updates the compendium of information and domain thinking presented in the 2011 publication and continues to build on the understanding of what is (and isn't) known.

Information in the report is drawn from multiple sources. Longitudinal and time-series data are particularly valued because of the insights they give into change over time.

Different sources yield parameter estimates that vary with the study population, the sampling strategy and timing of data collection. All sources are cited to help the reader put the information into context.

As part of this work The University of Sydney's Workplace Research Centre created two spreadsheets based on the 2006 & 2011 ABS Population & Housing census data that generate dairy-specific regional statistics. Please contact Dairy Australia if you would like to access to this resource.

A suite of regional reports have also been published for the first time in 2013 to assist local workforce planning and action. These are also available from Dairy Australia.

Dairy Australia would like to acknowledge and thank the organisations whose information provides the content for this report.

To provide feedback on information in the report or suggestions for the future please contact Dairy Australia.

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The dairy-specific ('ABS dairy 2006 & 2011') spreadsheets were created by: The University of Sydney's Workplace Research Centre, (02) 9351 222, www.wrc.org.au

Taking Action.....

This Factfinder helps the dairy industry to address its workforce issues by informing its portfolio of relevant programs and projects.

The Dairy Industry People Development Council has responsibility for the industry's workforce planning and action strategy in both the pre-farm gate and manufacturing areas. Its members include representatives from farmers' organisations, government and Dairy Australia. It identifies emerging issues (legislation, market and other factors) that may impact on the dairy workforce strategy and recommends Dairy Moving Forward RDE&E priorities to investors and policy development requirements to the representative organisations.

Current areas of work include: careers promotion; farm and manufacturing scholarships; tools and resources to enable best practice people management on farms; leadership development and young dairy farmer development programs; support for the alliance partners of the National Centre for Dairy Education Australia; and Australia-wide delivery of extension services.

Content

2013 Factfinder @ a glance	2
Materials and method	3
Dairy farm businesses in Australia	7
The dairy farm sector	8
Importance of dairy (production value, exports & employment share).....	8
Numbers of people in the industry	10
About the eight dairy regions.....	12
The range of farming systems	13
Dairy farm business management	17
Models of ownership and operation.....	17
Farm business vision.....	18
Workability of farm systems ('The Navigator').....	19
HR (human resource) management on farm.....	20
Workplace safety management	22
Farm profitability & potential for business growth	24
Farm scale and capacity.....	24
Measures used to describe the financial health of farm businesses.....	25
Operational efficiency (productivity of farm & people).....	27
Farm profitability (livelihood of farming families).....	33
Equity & debt (opportunities for growth)	37
Managing risk (farm business sustainability).....	40
Planning for the future.....	44
Dairy farm business transitions	44
Succession planning.....	46
Where dairying sits in the labour market.....	49
Regional workforce planning and action	50
Regional labour markets	51
Level of workforce participation.....	53
Main industries of employment.....	55
Income and hours worked for all types of employment	56
Dairy farm workforce dynamics.....	58
About the dairy farms that employ	58
Attracting staff.....	60
Retaining staff.....	63

The people on farm.....	67
Owner-managers	71
Employees.....	75
Independent contractors	78
Training and development.....	78
Skills and qualification on farm.....	78
Pre-farmgate Vocational Education and Training (VET).....	79
Traineeships.....	84
Workplace Health & Safety.....	84
Work-related death & injury.....	84
Physical & mental health and well-being.....	89
Access to services	91
Services with a people focus.....	93
Dairy product manufacturing in Australia	95
About the manufacturing sector	96
About the people in manufacturing	98
Post farmgate training and skill development.....	101
Appendices	105
References	106
List of figures and tables	111
Dairy region Statistical Local Areas for 'ABS dairy'	115
Feedback Form	118

The dairy industry

	FY06-07	FY11-12
Milk production	9.5 billion L	9.5 billion L
Dairy cows	1,795,000 cows	1,630,000 cows
Dairy farms	8,055 farms	6,770 farms
People working on dairy farms¹	20,650 people	24,750 people
People in dairy manufacturing¹	15,675 people	18,250 people

(1) Australian Food Statistics for 2011-2012 from Australian Department of Agriculture, Food & Fisheries 2013

Dairy farm businesses

98% of farms are family-owned. 19% of dairy farm businesses are expanding and 68% are in a 'steady state' (17% because they can't expand & 51% because the business is 'where they want it').

The average capital value of assets owned on dairy farms across Australia has ranged between \$3.2 million and \$3.7 million in the six years between FY07-07 and FY11-12, while the average debt has increased from \$0.5 million to \$0.7 million. Farm profitability varies greatly from farm-to-farm, region-to-region and year-to-year with fluctuations in income from milk, fodder costs & interest payments. The majority of farms have generated a profit across the years.

35% of dairy farms don't employ people, 65% do. There has been a gradual increase in the proportion of dairy farms that employ people and the proportion of people working in paid roles between 2007 and 2012. 66% of the farms that employ staff had 1 or 2 employees. Larger herds tend to have more employees.

17% of family farms have a sharefarming arrangement in place.

As baseline measures around Human Resource Management: 28% of farms that employ had a written employment agreements based on the award in 2006; and 10% of farms had written position descriptions for all the people that worked in the business in 2008.

In 2011 someone had an injury at work that prevented them from working the next day on 14% of farms, with an average of 26 days lost due to injury (range 1-200).

In 2007, 41% of farms had a plan in place for future ownership of the farm.

Dairy farm workforce

24,750 people worked on dairy farms in FY11-12, an increase of 20% since FY06-07. 51% of the people working on dairy farms in 2011 were owner-managers, 10% are other family members and 38% were employees (an increase of 7% since 2006).

31% of employees in 2012 were Assistant Farmhands, 30% were Farmhands, 30% were Senior Farmhands, 5% were Production Managers & 2% were Business Managers.

Of the employees on dairy farms (both those working full-time and those working part-time): 39% were 30-49 years of age; 59% earned \$400-\$1000 a week; and 37% worked 50 hours per week or more.

The population of people who work on farm is very dynamic – staff changes are anticipated on about 1 in 5 farms every 12 months. Almost one-third (32%) of people working as assistant farmhands in 2012 had started in the last 12 months and all were new to the industry.

Available data (although very limited) suggests there is a problem with employee retention on Australian dairy farms. Although the catchcry in dairy has been how hard it is to find good workers the difficulty appears to be more about the 'churn', the proportion of people moving from farm-to-farm or deciding against dairying as a career.

In 2007, 51% of farmers relied on self-knowledge to solve employment issues. Since then, The People in Dairy online resource (www.thepeopleindairy.org.au) went live in 2008, 119 people (22 farmers and 97 professionals) from across Australia have participated in the new Diploma of Human Resource Management (Dairy), and Dairy Australia launched the Employment Starter Kit (ESKi) for dairy farmers in 2013.

The level of post-schooling qualifications in the dairy farming workforce has increased from 30% in 2006 to 35% in 2011, especially at the Certificate III/IV level.

3% of the people in dairy cattle farming said they were currently attending TAFE or university at the 2011 census.

It is estimated that about 1 in every 10 farms have a trainee.

See also the Dairy People Factfinder reports for each region

Materials and method

Materials and method

Industry objective: To be able to fully consider the people dimension in the planning and development of initiatives for the dairy industry.

Factfinder aims: To provide industry with an evidence-based information resource that helps build a rich picture about the people in the industry: who, how many, where and why.

Primary audience: Workforce planning and action groups, the Dairy Industry People Development Council¹ and other policy makers, and program designers.

Scope: People in the farming and manufacturing arms of the dairy supply chain.

Background: This is the second Factfinder, the first being published in 2011. The new edition is an opportunity to update information (incorporating the 2011 ABS census data in particular) and present current thinking in the people domain.

Approach: The Factfinder is a compilation of information from publically available sources presented in a conceptual framework created by Dairy Australia's 'The People in Dairy' program. Some information presented in 2011 is still the most current available and is included in 2013 to locate components within the conceptual framework and give the fullest possible overview.

Data sources: Longitudinal and time-series data are particularly valued because of the insights they give into change over time. The primary information sources for the Factfinder are the five-yearly ABS Population & Housing census, ABARES annual agricultural survey and the dairy industry's own annual National Dairy Farmer Survey (2004-2012). A brief description of these data sources is given at the end of this section.

Sometimes estimates for parameters vary between studies due to differences in the study population, the sampling strategy and timing of data collection. This is not regarded as an issue provided that the figures and trends are consistent. Information sources are cited to help the reader put this into context (see the Appendix on page 106 for the full reference list).

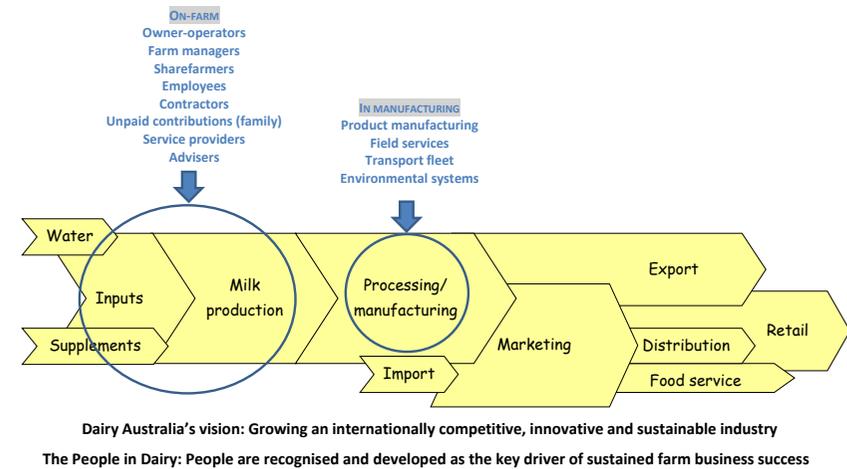
Data aggregation: Information is aggregated and reported at national, state and regional levels. Dairy regions are comprised of ABS Statistical Local Areas where 20 or more people work in dairy farming or dairy manufacturing. These 'dairy SLAs' are listed in the Appendix (page 115). In many sections of the Factfinder the dairy regions (dairy SLAs) are compared to 'regional Australia' (dairy and non-dairy SLAs in rural Australia).

¹ In 2010 the Dairy Industry People Development Council was established to take responsibility for the dairy industry's workforce planning and action strategy in both the pre-farm gate and manufacturing areas. Its members include representatives from farmers organisations, government and Dairy Australia. It identifies emerging issues (legislation, market and other factors) that may impact on the dairy workforce strategy, recommends RDE&E priorities to investors and recommends policy development to the representative organisations.

Government policy-makers will be most interested in federal and state-based information. Those planning and delivering industry programs will be more interested in the 8 dairy regions listed below and shown in the map on page 12.

The Factfinder focuses on the farming and manufacturing parts of the supply chain

Source: Adapted from Dairy Australia



The 'dairy regions' described in this report

Source: Defined for this report

Dairy regions (8)	Dairy subregions (number of dairy SLAs shown in brackets ^a)
Western Victoria	Colac (7), Heywood (3), Terang & Warrnambool (4)
Murray ^b	Northeast Alpine Valleys (6), Northern Victoria (13), Riverina (5)
Gippsland	Central & East Gippsland (7), South Gippsland (4), West Gippsland (18)
Southern NSW ^b	South coast (6), Central NSW (11)
Subtropical Dairy ^b	Northern rivers NSW (23), Southeast & Central Qld (48), Far North Qld (2)
South Australia	Barossa Valley & Central (13), Southeast & Mt Gambier (5)
Tasmania	Tasmania (north east, north west and King Island) (12)
Western Australia	Western Australia (10)

(a) 'Dairy SLAs' are Statistical Local Areas where 20 or more people work in dairy farming or dairy manufacturing
(b) Dairying in the state of New South Wales is divided between 3 different dairy regions: NSW South, Murray and Subtropical Dairy

Longitudinal data sources

Australian Bureau of Agricultural and Resource Economics and Science (ABARES):

ABARES is a research organisation within the Australian Government Department of Agriculture². It has conducted surveys of Australian agricultural industries since 1945 to provide information on the economic performance of farm businesses for industry briefing and reports. ABARES conducts two surveys annually that are of relevance to the dairy industry: the Australian Agricultural and Grazing Industries Survey (AAGIS) and the Australian Dairy Industry Survey (ADIS, see below). These surveys cover detailed physical and financial estimates for the dairy industry and for broadacre farms: especially annual publication of the 'Australian dairy financial performance of dairy producing farms', 'Australian dairy farm technology and management practices' and 'Australian farm survey results' – which can be found at www.daff.gov.au/abares.

Australian Bureau of Statistics (ABS) census data: The ABS conducts several types of data collections to assist policy makers, industry organisations and producers with planning, budgeting and making submissions to government. A sample of agricultural farm businesses is surveyed each year to collect information on agricultural production for the national accounts (Gross Domestic Product etc) and as part of the Labour Force Survey. It also conducts the ABS Population & Housing census every five years.

A core resource for the Factfinder is dairy-specific data from the 2006 and 2011 census created for Dairy Australia by The University of Sydney's Workplace Research Centre and made available in two spreadsheets (referred to as **ABS dairy 2006 & 2011** in this document). The Factfinder also refers to several ABS catalogues including: state and territory statistical indicators (catalogue 1367.0); the state accounts (catalogue 5220.0); the value of principal agricultural commodities (catalogue 7501.0 & 7503.0); international trade in goods and services (catalogue 5368.0); and the labour force statistics (catalogue 6291.0.55.003). This information can be found at www.abs.gov.au.

Australian Centre for Agriculture Health and Safety (ACAHS): AgHealth Australia is within the School of Public Health of the University of Sydney. It works with the National Farm Injury Data Centre to research the incidence of injury and deaths on Australian Farms and is funded through grants from Hunter New England Area Health Service and the NSW Department of Health. More information is available at www.aghealth.org.au.

Australian Dairy In Focus (ADIF): This report is published annually by Dairy Australia to provide a current industry overview for stakeholders and interested parties. It is based on information supplied by Australian dairy processing companies, farmer co-operatives, dairy organisations and other initiatives (including the National Dairy Farmer Survey described below). The latest report can be viewed at www.dairyaustralia.com.au via the 'Industry overview' tab.

Australian Dairy Industry Survey (ADIS): ABARES has been conducting this survey annually since 1979. About 300 dairy farms are chosen from a list of dairy farms that have paid levies based on their milk deliveries (sample sizes and weighting are shown on the map on page 6). The farms have to have an estimated value of agricultural operations of \$22,500 or more to be involved. Many farms are retained each year to help accurately measure change. Farmers are interviewed face-to-face and are also contacted by telephone in October each year to obtain estimates of costs and production for the current financial year. More information is available at www.daff.gov.au/abares.

Dairy Australia Situation and Outlook (Dairy S&O): This report is produced annually by Dairy Australia to provide the industry with an assessment of its position and outlook, and to provide factual material for banks, governments, and suppliers of products and services to the dairy industry. It presents the National Dairy Farmer Survey results (see below) and the views of global dairy market analysts, retail analysts, dairy company management, farm consultants and farm leaders. A subset of farms is surveyed six months after the full National Dairy Farmer Survey to provide industry with an interim update.

Dairy Industry Farm Monitor Project (DIFMP): This initiative of Dairy Australia and the Department of Primary Industries Victoria aims to provide the dairy industry with information about the profitability and productivity of dairy farm businesses. It analyses data about 70 farms across Victoria each year: in the north (22), southwest (25) and Gippsland (24) in 2010. Although the information does not represent the population, it provides an in-depth financial analysis for a range of herd sizes and farming systems in the Victorian industry. This longitudinal survey shows trends in the study herds over 5 years. For more information see www.dpi.vic.gov.au/dairyfarmmonitor.

National Centre for Farmer Health: The centre is a partnership between Western District Health Service and Deakin University that provides leadership in research, education, information and service delivery to improve health, wellbeing and safety for farmers and farm workers. It posts many contemporary, key papers and reports in this area on its website www.farmerhealth.org.au.

² Formerly the Department of Agriculture, Forestry and Fisheries

Materials and method

National Centre for Vocational Education Research (NCVER): The centre is a not-for-profit company owned by state, territory and federal ministers responsible for training that provides research and statistical information to a wide range of stakeholders (education and training authorities, industry skills councils and employer- and employee-based associations) from 3 databases. Please note data from NCVER was not used in this report as it did not differentiate trainees beyond 'skilled animal and horticultural worker'. More information is available on www.ncver.edu.au.

National Dairy Farmer Survey (NDFS): This annual survey was first commissioned by Dairy Australia in 2004 to assess the state and future expectations of the industry, and learn more about farm management practices through supplementary topical questions. About 1000 phone interviews are conducted each year in February-March with the people who run the farm: the owners, managers or sharefarmers responsible for making the business decisions on farm. Specific questions around the people on farm have been asked between 2004 and 2012.

Much of the content for the Factfinder has been drawn from this survey: directly from the **Dairy Australia Situation and Outlook** report (the latest report can be viewed at www.dairyaustralia.com.au) and from further analysis of trends in the original data.

About the farms and farmers in the 2012 National Dairy Farmer Survey

Source: NDFS 2012 (1002 farms)

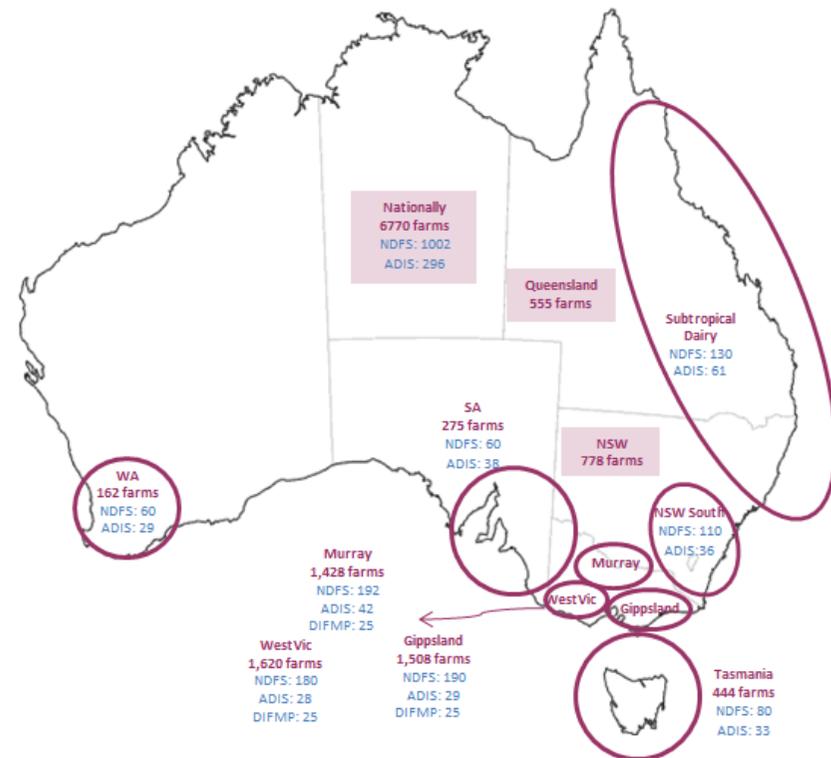
For every 100 respondents	For every 100 survey farms
86 were farm owners, 6 were sharefarmers, 4 were farm managers and 3 were lessees	98 were family farms and 2 were corporate farms
41 were younger than 50	17 involved sharefarmers in their business
20 were women	47% of herds have 301-500 cows

Queensland Dairy Accounting Scheme: The scheme was established in 2002 to help dairy farmers make informed decisions based on business profitability, solvency and efficiency. Data is collected on the physical and financial data from 54 larger dairy herds on the Darling Downs, the southeast coast and in north Queensland between August to November, followed by discussion of the results and their interpretation with the participating farmers. The project is part of the Queensland's Department of Employment, Economic Development and Innovation 'Business Plu\$' project and is co-funded by Dairy Australia. Please note data from QDAS has not been summarised in the Factfinder due to time restrictions. More information is available at www.dairyinfo.biz.

TasMilk 60 study: TasMilk60 was a longitudinal study conducted by Dairy Australia's Grains2Milk program that provides insights to the profit and performance of pasture-based feeding systems for farms feeding 3 levels of grain/concentrate ('low' ie <1 tonne of dry matter per cow per year, 'moderate' 1 to <2 tonne and 'high' >2 tonnes). The study analysed the physical and financial performance of about 60 Tasmanian farms over 3 consecutive years that were notable for their volatile milk prices and farm input costs (FY06-07 to 08-09). For more information see www.dairyaustralia.com.au/tasmilk60.

Sample sizes for the main data sources

Sources: ABARES 2013³ (296 farms); NDFS 2012 (1002 farms); DIFMP 2013 (75 farms)
Total number of farms from the section 'About the eight dairy regions', page 12



³ Dharma S and Dahl A (2013). Australian dairy Financial performance of dairy producing farms, 2010–11 to 2012–13, ABARES research report 13.9, Canberra, June

Dairy farm businesses in Australia

People are more likely to enter and invest in the industry when dairy farms are profitable and straightforward to run

Dairy farm businesses in Australia

Dairy Australia's objective is to have an industry of profitable, productive and sustainable farm businesses. The People in Dairy program recognises people as the key driver to wealth creation and industry resilience. Knowing how the Australian dairy industry is changing and what it means to own a farm business gives context to this.

The dairy farm sector

Importance of dairy (production value, exports & employment share)

- The dairy industry is one of Australia's major rural industries, with milk production ranking third behind beef and wheat based on a gross production value of \$3.99 billion at the farmgate (ABARES 2013⁴).
- In 2011, 8% of farmers (owners and managers) in Australia were in dairying (ABS 2012⁵).
- The Australian dairy industry is based on 6,398 small to large individual farm businesses (ADIF 2013).
- Milk production peaked at 11.2 billion litres in 2002 and was about 9.2 billion litres in 2013 (ADIF 2013).
- About 40% of milk production was exported in FY12-13 (ADIF 2013). Victoria produces 86% of the value of Australia's dairy exports (Ridley 2012⁶).
- In FY12-13, Australia exported \$2.76 billion worth of dairy products (ADIF 2013). Dairy represented 13% of the value of processed food exported from Australia in FY11-12 (DFAT 2012⁷).
- In 2011, 7.5% of the people in 'Agriculture, Forestry & Fisheries' nationwide worked on dairy farms (ABS dairy 2011). This proportion was much higher (25.1%) in the dairy regions (see page 12).
- Dairy farms are also an important source of beef production in southern Australia with cull dairy cows, bulls and bobby calves accounting for a proportion of the national cattle slaughter (eg 18% in FY01-02, Jeong *et al* 2004⁸).

⁴ ABARES (2013). *Agricultural commodities June quarter 2013*, CC BY 3.0, Canberra

⁵ ABS (2012). *Australian farming and farmers*, Australian Social Trends, ABS Catalogue 4102.0, Canberra, December (Data derived from the 2011 ABS Population and Housing census)

⁶ Ridley L (2012). *Victorian Food and Fibre Export Performance 2011-12*, Department of Environment and Primary Industries Victoria (viewed at their website www.dpi.vic.gov.au June 2013)

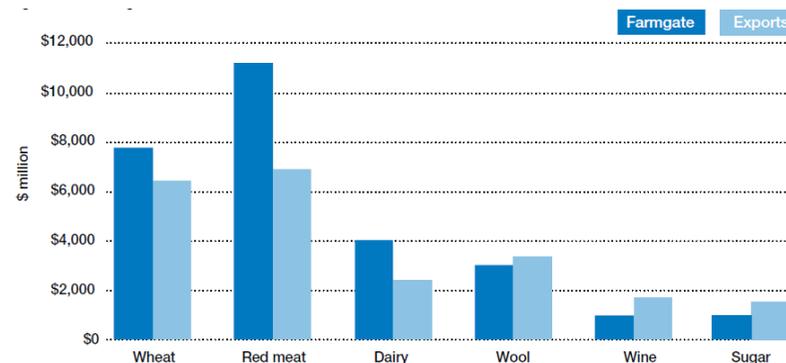
⁷ DFAT (2012). *Trade in Primary and Manufactured Products 2011-12*, Department of Foreign Affairs and Trade, Canberra, December

⁸ Jeong M-K, Sheales T, Gleeson T, McDonald D (2004). *Korean and Australian markets and prospects for trade*, ABARE eReport 04.22, Prepared in conjunction with the Korea Rural Economic Institute, Canberra, December

- Dairy farmers invest in RD&E through levies to the dairy and beef industries.

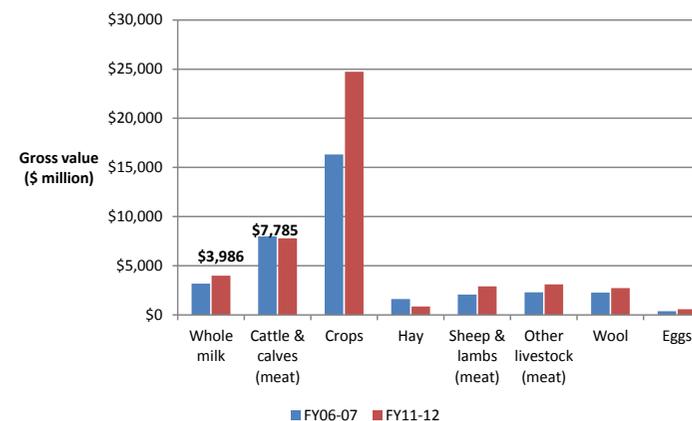
Dairy is Australia's third largest rural industry

Source: ADIF 2013: Figure 1. Farmgate value vs Export sales value 2011/12



The gross value of milk production in FY11-12 was \$3.99 billion

Source: ABS catalogue 7501.0 for FY06-07 & FY11-12



Dairy farm businesses in Australia

About 9% of agriculture's gross value comes from milk production

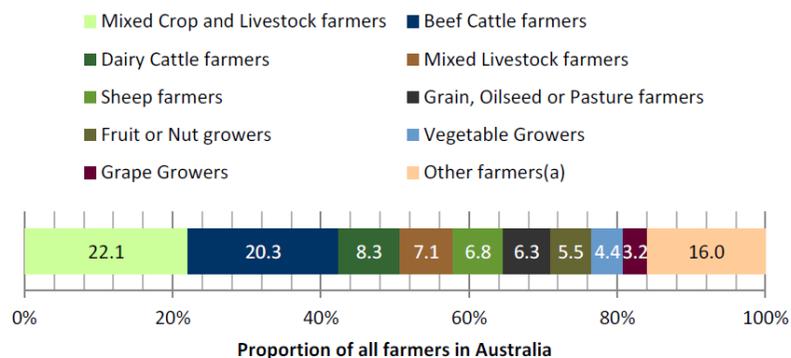
Sources: ABS Catalogue 7503.0 2006⁹ & 2013¹⁰

Gross value of production	FY04-05 (\$ million)	FY11-12 (\$ million)
Total agriculture	\$35,555	\$46,687
Crops	\$17,807	\$24,733
Wheat	\$ 4,317	\$ 6,775
Livestock share of total agriculture^a	\$17,747	\$21,101
Cattle and calves	\$ 7,829	\$ 7,785
Milk production	\$ 3,194	\$ 3,986

(a) Livestock products & Livestock slaughtered and other disposals

8% of Australian farmers (owners & managers) were in dairying in 2011

Source: ABS 2012¹¹: "Farmers in Australia - 2011"



(a) Other farmers includes sugar cane growers, poultry farmers, flower growers, apiarists etc

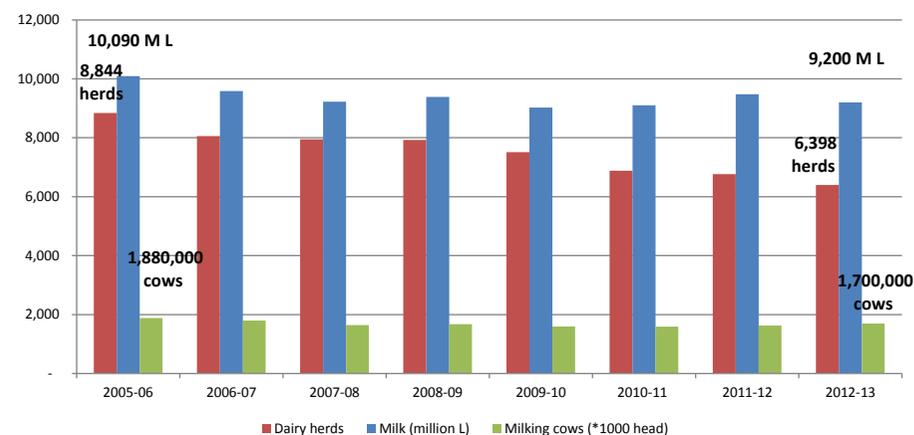
In 2012 the dairy industry was based on 6,770 farm businesses

Sources: (1) ADIF 2007 & 2012; (2) DAFF 2009¹² & 2013¹³

	FY11-12	Change since FY06-07
Dairy farms¹	6,770 farms	↓16%
People working in dairy farming²	24,750 people	↑20%
Milk production¹	9.48 billion litres	↓1%
Dairy cows¹	1,630,000 cows	↓9%
Average litres per cow¹	5,926 L/cow	↑14%

Milk production has maintained despite fewer farms and cows

Source: ADIF 2013



⁹ ABS Catalogue 7503.0, Value of Agricultural Commodities Produced, Australia 2004-05, Canberra

¹⁰ ABS Catalogue 7503.0, Value of Agricultural Commodities Produced, Australia 2011-12, Canberra

¹¹ ABS (2012). Australian farming and farmers, Australian Social Trends, ABS Catalogue 4102.0, Canberra, December (Data derived from the 2011 ABS Population and Housing census)

¹² DAFF (2009). Australian Food Statistics 2008, Department of Agriculture, Food and Fisheries, Australian Government, Canberra

¹³ DAFF (2013) Australian food statistics 2011-12, Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra

Dairy farm businesses in Australia

38% of the milk produced in Australia was exported in 2012

Sources: ADIF 2007-2013



Dairy farmers invest in RD&E through industry levies

Sources: (1) Australian Government Budget 2012-13¹⁴; (2) Dairy Australia Annual report 2011-2012; (3) www.mla.com.au; (4) MLA Annual report 2011-2012

Industry body	Farmer levy rate ¹	Revenue FY11-12	Government contribution
Dairy Australia	2.8683 cents per kg milk fat ¹⁵ 6.9914 cents per kilogram of protein	\$57.9 M ²	32%
Meat & Livestock Australia	\$5.00 per cow sold ³ \$0.90 per bobby calf sold	\$159.9 M ⁴	25%

¹⁴ Australian Government Budget 2012-13, Budget paper Number 2, Part 1 Revenue measures (www.budget.gov.au)

¹⁵ The dairy service levy increased on 1 July 2012 from 2.6075 cents per kg milk fat and 6.3558 cents per kg protein (about 0.32 cents per litre based on average milk composition)

Numbers of people in the industry

Three data sources describe the number of people working on dairy farms: the five-yearly ABS Population & Housing census, monthly surveys conducted for the ABS Labour Force Survey, and estimates imputed from the National Dairy Farmer Survey.

Much of the analysis in the 2013 Dairy People Factfinder draws on the ABS census¹⁶ figures for demographic comparisons between the regional populations of workers. Numbers are imputed from the National Dairy Farmer Survey for information not contained in the census such as the proportion of the farm workforce that is casual, and the types of positions held by employees.

- There is a large difference in the two sets of figures provided by ABS, with Labour Force Survey estimates being higher than the figures in the five-yearly census (ABS dairy 2011, DAFF 2012¹⁷). The difference could arise from definition (the survey counts partners as well as proprietors and employees as part of the farm business) and from sampling error¹⁸.
- The ABS Labour Force Survey estimated there were 43,000 working in the dairy industry in FY11-12, with 24,750 in dairy cattle farming and 18,250 in dairy product manufacturing (DAFF 2013¹⁹).
- 20% more people were dairy cattle farming in 2012 than in 2007 (DAFF 2011 & 2013). This contrasts with a downward trend in agricultural employment more generally. Employment in farm and fisheries production in Australia has been declining over the last decade and in FY11-12 was 61% of the level in FY00-01 (DAFF 2013).
- 16% more people were in dairy product manufacturing in 2012 than in 2007 (ABS dairy 2006 & 2011). This upward trend in the numbers employed in the food and beverage manufacturing sector is seen more generally, where employment in FY11-12 was 24% higher than in FY00-01 (DAFF 2013).

¹⁶ The ABS census provides a direct count of the entire population - rather than an estimate from a sample and is based on individuals who identify themselves as working in the industry.

¹⁷ DAFF (2012). Australian Food Statistics 2010-2011, Department of Agriculture, Food and Fisheries, Australian Government, Canberra (figures based on ABS Labour Force Detailed Electronic Delivery catalogue 6291.0.55.001 & unpublished ABS data)

¹⁸ The Australian Bureau of Statistics describes the generic reasons for differences between the Labour Force Survey and the Census in a Fact Sheet on their website

<http://www.abs.gov.au/websitedbs/censushome.nsf/home/factsheets/lfsfc?opendocument&navpos=450>

¹⁹ DAFF (2013) Australian food statistics 2011-12, Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra

Dairy farm businesses in Australia

Two ABS sources quote very different numbers for the people in dairy^a

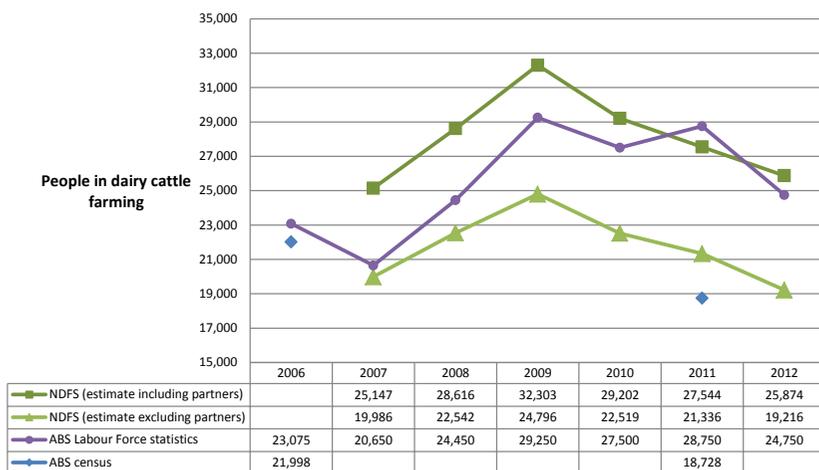
Sources: (1) ABS dairy 2011; (2) DAFF 2012

ABS census 2011 ¹		ABS Labour Force Survey 2010-11 ²	
Census population	21,507,719 people	Survey size	Unknown
People in dairy		People in dairy	
On farm	18,728 people	On farm	28,750 people
In manufacturing	16,440 people	In manufacturing	21,250 people
TOTAL in dairy	35,168 people		50,000 people

(a) The ABS website has a fact sheet explaining 'Differences between the LFS and the Census'

ABS Labour Force Survey estimates are higher than the figures in the census

Sources: (1) ABS dairy 2006 & 2011; (2) DAFF 2011²⁰ & 2013²¹; (3) NDFS 2007-2010



²⁰ DAFF (2011). Australian Food Statistics 2009-2010, Department of Agriculture, Food and Fisheries, Australian Government, Canberra

²¹ DAFF (2013). Australian Food Statistics 2011-2012, Department of Agriculture, Food and Fisheries, Australian Government, Canberra

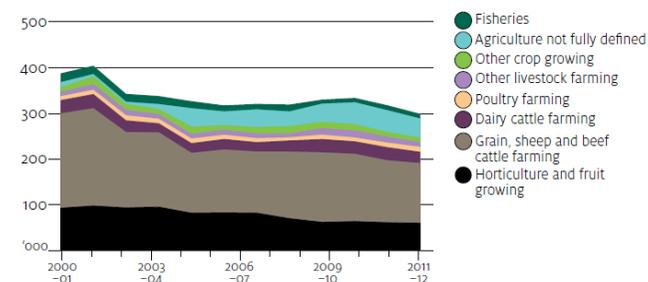
20% more people were dairy cattle farming in 2012 than in 2007

Sources: DAFF 2009 & 2013

	FY11-12	Change since FY06-07
People working in dairying	43,000 people	↑18.0%
Dairy cattle farming	24,750 people	↑19.9%
Dairy product manufacturing	18,250 people	↑16.4%

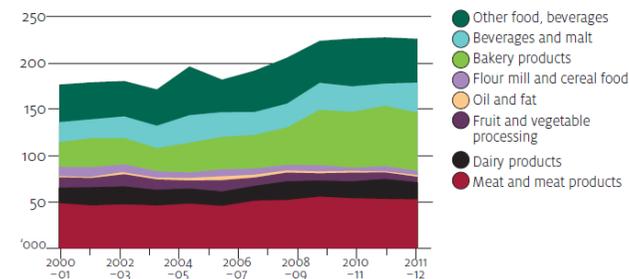
Employment in farm & fisheries was 61% less in 2012 than in 2001

Source: DAFF 2013: Figure 7 Employment in farm and fisheries production in Australia



Employment in food manufacturing was 24% higher in 2012 than in 2001

Source: DAFF 2013: Figure 10 Employment in Australian food and beverage manufacturing



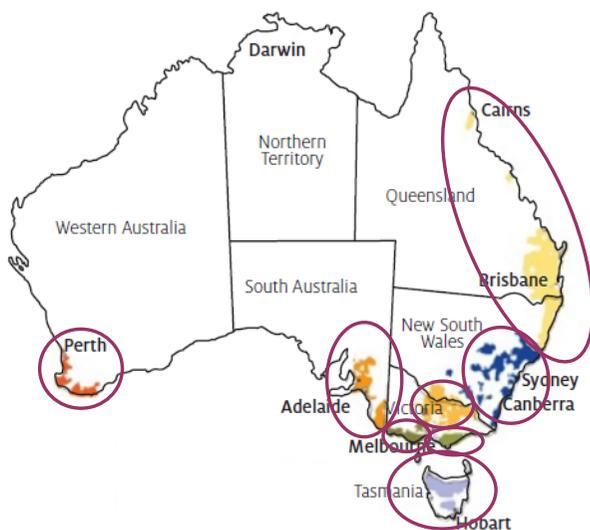
Dairy farm businesses in Australia

About the eight dairy regions

- Farms are clustered geographically within states and the industry has grouped them into 8 dairy regions. 72% of the people who work on dairy farms or in dairy product manufacturing are in the dairy regions (ABS dairy 2011).
- In FY12-13, 66% of milk was produced in Victoria, 12% in NSW, 8% in Tasmania, 6% in SA, 5% in Queensland and 4% in WA (Dairy Australia 2013²²).
- Farm numbers have reduced in all regions between 2006 and 2013, especially in the Murray, WA & Queensland (ADIF 2007, Dairy Australia 2013²³).
- 60% of people employed in agriculture in Western Victoria's dairy region are dairy farming (ABS dairy 2011). Other regions where a significant proportion of the people in agriculture are on dairy farms are Tasmania (43%) & the Murray (41%).
- ABARES estimates the dairy industry has a regional economic multiplier effect in the order of 2.5 from the downstream processing of dairy product (ADIF 2010).

There are 8 dairying regions in Australia

Source: Dairy Australia



²² From Dairy Australia www.dairyaustralia.com.au viewed October 2013

²³ From Dairy Australia Trade and Strategy, estimated by Regional Development Programs

25% of agricultural workers in the dairy regions worked on dairy farms in 2011

Sources: ABS dairy 2006 & 2011 (employed persons)

Area	In Agriculture, Forestry & Fisheries	In dairy cattle farming ^a	% AFF in dairying
Nationwide			
2006	280,923 people	21,998 people	7.8%
2011	249,827 people	18,728 people	7.5%
In the dairy regions			
2006	98,793 people	20,453 people	20.7%
2011	67,997 people	17,090 people	25.1%

(a) Note that figures in the ABS census are lower than those in the ABS Labour Force Survey (as per page 10)

72% of the people in the industry worked in the dairy regions in 2011

Sources: ABS dairy 2011 (all 10,058,322 people who are working)

Dairy region	All employed	In Agriculture, Forestry & Fisheries	People in dairy farming	People in dairy manufacturing
Gippsland	314,749	9,348	3,502	1,947
Murray	157,081	9,175	3,790	1,954
Subtropical Dairy	558,899	26,315	2,756	761
Southern NSW	278,785	9,176	973	843
South Australia	119,349	3,450	945	322
Tasmania	45,144	2,657	1,155	570
Western Australia	31,161 ^c	2,259	585	133
Western Victoria	65,422	5,617	3,384	1,698
ALL dairy regions^a	1,570,590	67,997	17,090	8,228
ALL nationwide^b	10,058,322	249,827	18,728^d	16,440

(a) Dairy regions refers to SLAs in regional Australia where 20 or more people work in the industry

(b) This includes dairy SLAs, non-dairy SLAs in regional area and manufacturing in metro areas

(c) Figures in this column come from Table E.1 Industry of employment of the ABS dairy spreadsheet (however the number of employed people in WA may be under-represented as the figure in E.1 is lower than in Table C.3)

(d) Note that figures in the ABS census are lower than those in the ABS Labour Force Survey (as per page 10)

See page 55 for more information on the main industries of employment.

Dairy farm businesses in Australia

Farm numbers have reduced in all regions over the past 7 years

Source: ADIF 2006 & 2013 (registered dairy farms from the State Milk Authorities)

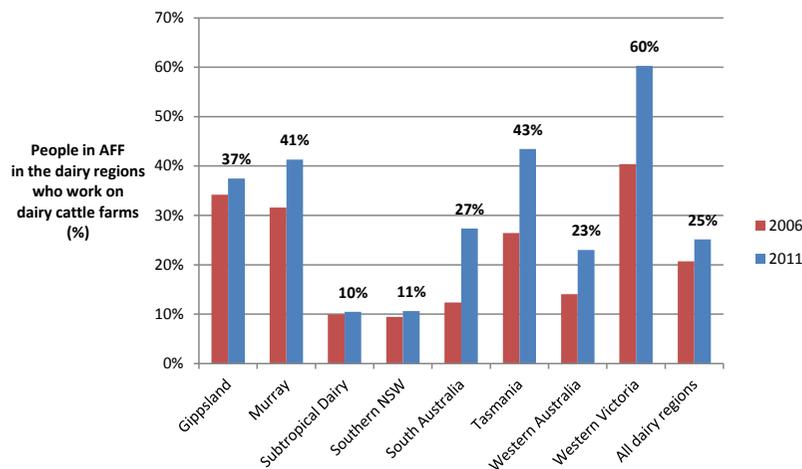
Region	Herds in FY12-13	Change since FY05-06
Gippsland ^a	1,418	↓20%
Murray ^a	1,342	↓41%
Queensland ^b	518	↓35% ^b
NSW ^b	731	↓29% ^b
South Australia	268	↓30%
Tasmania	437	↓12%
Western Australia	160	↓35%
Western Victoria ^a	1,524	↓16%
National	6,398	↓28%

(a) Victoria split into regions based on proportion of herds in Countdown Milk Quality Awards in FY05-06

(b) Note the figures for Queensland & NSW are for the whole state – and not the dairy region

Dairying is a main agricultural employer in Western Victoria, Tasmania & the Murray

Sources: ABS dairy 2006 (98, 793 people in Agriculture, Forestry and Fisheries in the dairy regions) & 2011 (67,997 people)



The range of farming systems

Dairy farms vary widely in their management and production characteristics.

- In 2010, 52% of the annual national milk supply was produced by 19% of dairy herds (Dairy Australia data from Trade & Strategy 2013).
- There are more large herds than 6 years ago: 6% of herds had more than 500 cows in 2007 and this had increased to 9% by 2012 (NDFS 2007 & 2012).
- The industry has traditionally described farms as low or high input to indicate the level of input costs and intensity of the production system. It would be useful for strategy development to have a way of classifying farms by the factors that 'shape' farming systems and the way they are managed. This is yet to be designed.
- Dairy is the sole enterprise for 76% of dairy farm businesses (NDFS 2012). A higher proportion of dairy farms in the SA, WA and Subtropical Dairy regions have mixed farming enterprises.
- 73% of family-owned businesses that are mixed enterprise have only one other enterprise (NDFS 2011). Beef cattle production is the dominant 'other' enterprise. Fodder crops are of significance in Subtropical Dairy, Murray and SA.
- Herds are producing more than they were a few years ago following increases in both the average herd size and production per cow (ADHIS 2007 & 2012²⁴). Based on herd recording data, the increase over a 5-year period is calculated to be about 266,000 L more milk on average per herd or 18,000 kg more milk solids.
- There has been a lot of emphasis on pasture improvement, grazing management, fertiliser use and fodder crops as the intensity of production has increased over the past 10-15 years (Lubulwa and Shafron 2007²⁵).
- About three-quarters of the nutrition of dairy cattle is from pasture, compared to 100% in the 1980s (TheCIE 2011²⁶).
- Reliance on supplementary feed and off-farm feed has grown over the past 30 years although the proportion used on individual farms varies with seasonal conditions. About 5-10% of the annual national milk was produced from grain or concentrates in 1980 while today this figure is about 30% (Grains2Milk 2011).

²⁴ Australian Dairy Herd Improvement Report 2006/2007, ADHIS Pty Ltd, Melbourne; Australian Dairy Herd Improvement Report 2012, ADHIS Pty Ltd, Melbourne

²⁵ Lubulwa M, Shafron W (2007). Australian dairy industry technology and farm management practices 2004-05, ABARE Research Report 07.9, Prepared for Dairy Australia, Canberra, April.

²⁶ TheCIE (2011). Explaining changes in the dairy industry over the last 30 years, A report prepared by The Centre for International Economics for the Department of Primary Industries Victoria and Dairy Australia, Canberra, September

Dairy farm businesses in Australia

- 95% of herds graze pasture in their feeding system (Dairy Australia 2011²⁷). It's estimated that 96% of milking cows in Australia are fed grain or concentrates consuming on average 1.59 tonnes per cow per year, although this varies between systems and regions (Dairy S&O 2013).
- 91% of dairy farms use rotational grazing, 43% in combination with movable electric fences (Dharma *et al* 2012²⁸).
- The dairy industry in Australia classifies feeding systems into 5 main types²⁹: ranging from predominately grazing (Feeding systems 1 & 2), to the use of partial mixed rations³⁰ (Feeding systems 3 & 4) to zero grazing (Feeding system 5) (Dairy Australia 2011).
- Across Australia, 89% of farm systems supplement pasture with grain and concentrates fed in the bail, at low levels (36% of farms) or moderate-high levels (53% of farms) (NDFS 2012). In contrast, 25% of farms in South Australia use mixed rations and feed pads.
- Farmers under 40 years of age are likely to feed grain and concentrates at a higher average rate than farmers over 40 (Dairy Australia 2011).
- Nationally one-third of herds calve most cows in a single batch, one-third have split-calving and one-third calve year-round (NDFS 2012). Herds in Victoria and Tasmania tend to batch or split-calve, herds in Qld and NSW calve year-round, and herds in SA and WA tend split-calve or calve year-round.
- In the Dairy Industry Farm Monitor Project there were on average 99 milking cows for each full-time equivalent position (FTE) on Victorian farms (DPI 2013). This ranged from an average of 91 cows per FTE in Western Victoria to 108 cows per FTE in the Murray region.
- Although there are more cows per person on farms in Western Victoria, Tasmania and Gippsland than in other dairying regions, this people input would need to be converted to Full Time Equivalents to be useful as a partial description of workload (NDFS 2012).

²⁷ Dairy Australia (2011). 2011 Dairy Feeding Update, A briefing note prepared by Dairy Australia's Grains2Milk program

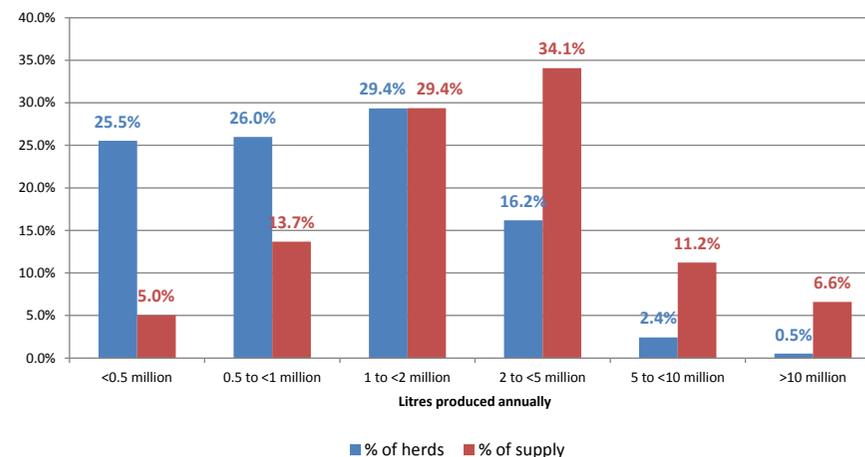
²⁸ Dharma S, Shafron W, Oliver M (2012). Australian dairy: Farm technology and management practices 2010–11, ABARES, Canberra, August

²⁹ Feeding system #1=mainly grazing, pasture & forages with up to 1.0 tonne of grain or concentrate fed in the bail; #2=as for #1 but more than 1.0 tonnes fed in the bail; #3= pasture grazed for most of the year + partial mixed ration fed on feed pad ± grain or concentrates fed in bail; #4= as for #3 except pasture grazed for less than 9 months per year; #5=zero grazing

³⁰ A Partial Mixed Ration refers to a feed mix that contributes part of the daily ration (in contrast to a Total Mixed Ration where the mix is 100% of the diet)

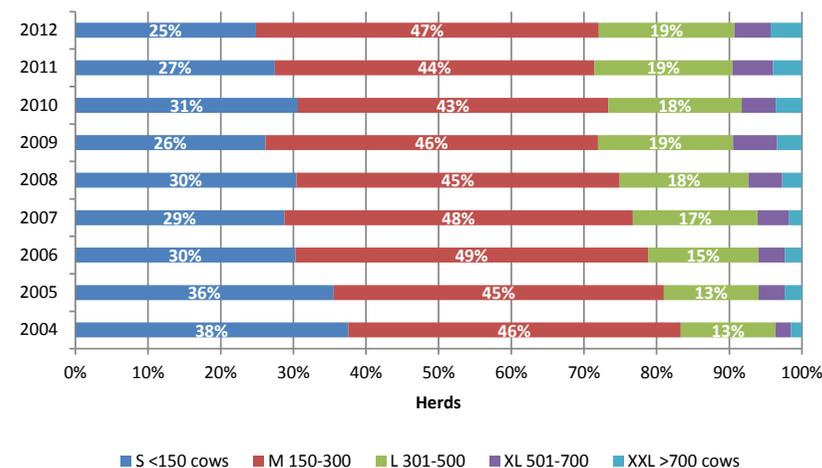
In 2013, 52% of the national supply was produced by 19% herds

Source: Dairy Australia (data from Trade & Strategy)



9% of herds had more than 500 cows in 2012 compared to 3% in 2004

Source: NDFS 2007& 2012 (about 1000 dairy farms across Australia)



Dairy farm businesses in Australia

Farm attributes that may 'shape' farming systems & their management

Source: Ruth Nettle (personal communication)

- Attitude to dairy farming (farm business segmentation)
- Enterprise type and phase in their business cycle
- Production for export or domestic markets / seasonality of milk payment
- Feeding system
- Main management focus on milk production, forage or both
- Calving system
- Dryland or irrigated pasture
- Stocking rate
- Resilience to climate variability
- Greenhouse gas emissions intensity
- Breeding objectives (milk production, cow type)

Dairy is the sole enterprise for three-quarters of farms

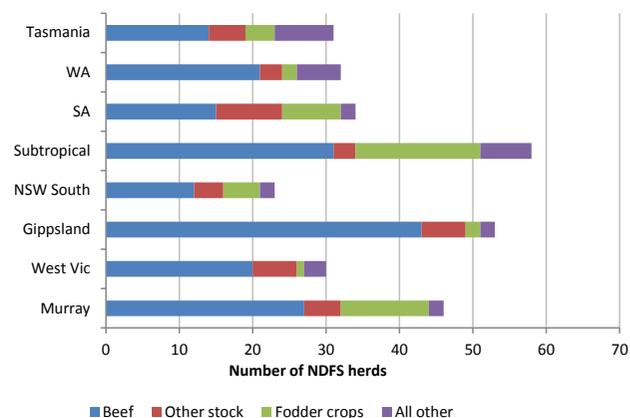
Source: NDFS 2011 (1005 survey farms)

Dairy as sole enterprise	76%	Mixed enterprise farms... ^a	
Mixed enterprise farms	24%	With beef	77%
		With other livestock	17%
		With fodder crops	21%

(a) Some farms have multiple interests so the total percentages can exceed 100%

Beef cattle is important for mixed enterprise dairy businesses

Source: NDFS 2011 (239 dairy farms that are mixed enterprise)



An overview of the dairy farming systems in Australia

Sources: (1) NDFS 2008 & 2012 (1002 farms each year); (2) ADHIS 2008(3966 herds) & 2012 (3301 herds)

Across Australia	2008	2012
Median herd size ¹	200 cows	213 cows
Average herd size	251 cows	280 cows
Herds with¹:		
Less than 150 cows	30%	25%
150-300 cows	45%	47%
301-500 cows	18%	19%
501-700 cows	5%	5%
More than 700 cows	3%	4%
Calving system (proxy for cash flow)¹		
Single batch	42%	33%
Split	23%	33%
Year round	33%	33%
Feeding system^{1a}		
Not available		
#1 Low bail		36%
#2 Moderate-high bail		53%
#3 Partial Mixed Ration		7%
#4 Hybrid system		2%
#5 Total Mixed Ration		2%
Average grazing land for milking herd¹		
164 ha		171 ha
Cows per hectare (median)^b		
1.6 cows/ha		1.7 cows/ha
Farms that irrigate		
49% farms		54% farms
Average area they irrigate		
24 ha (range 1-320)		44 ha (range 1-728)
Farms that herd record (imputed)^{2c}		
50%		49%

(a) This classification for 2009 onwards: Feeding system #1=mainly grazing, pasture & forages with up to 1.0 tonne of grain or concentrate fed in the bail; #2= more than 1.0 tonnes fed in the bail; #3= pasture grazed for most of the year + partial mixed ration on feed pad ± grain/concentrates fed in bail; #4= as for #3 except pasture grazed for less than 9 months per year; #5=zero grazing

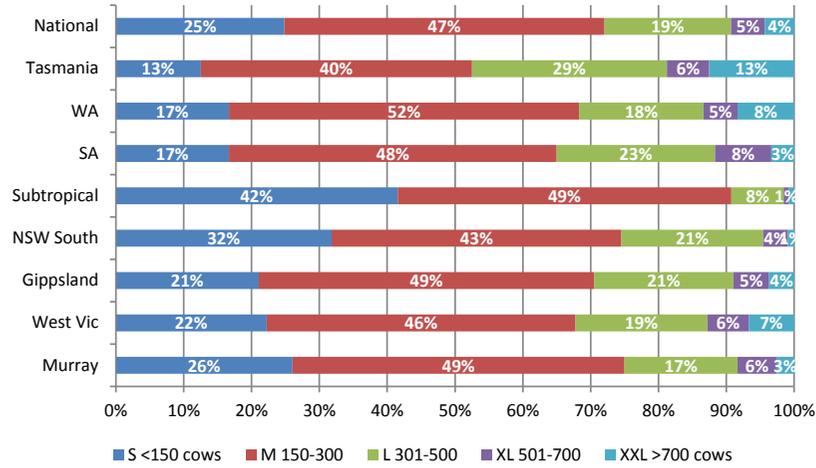
(b) Cows per hectare calculated from # cows calved this year/ # hectares grazed

(c) Farms that herd record based on ADHIS data (numerator) and ADIF data (denominator)

Dairy farm businesses in Australia

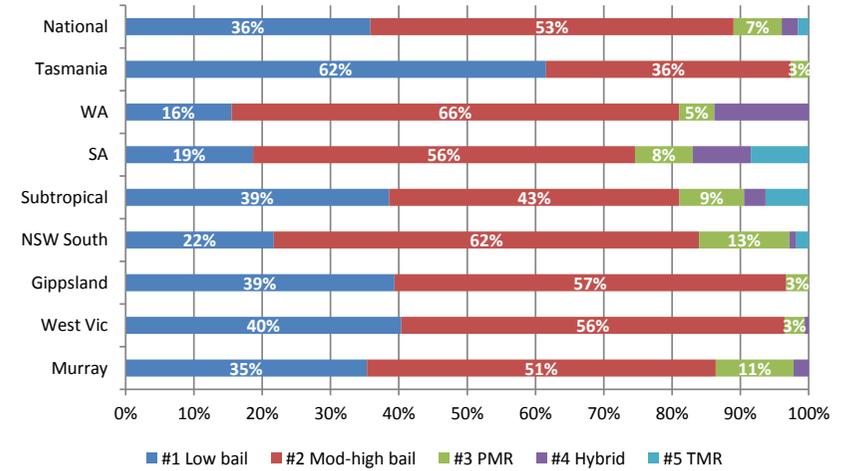
Herd distributions in each region

Source: NDFS 2012 (1002 survey farms)



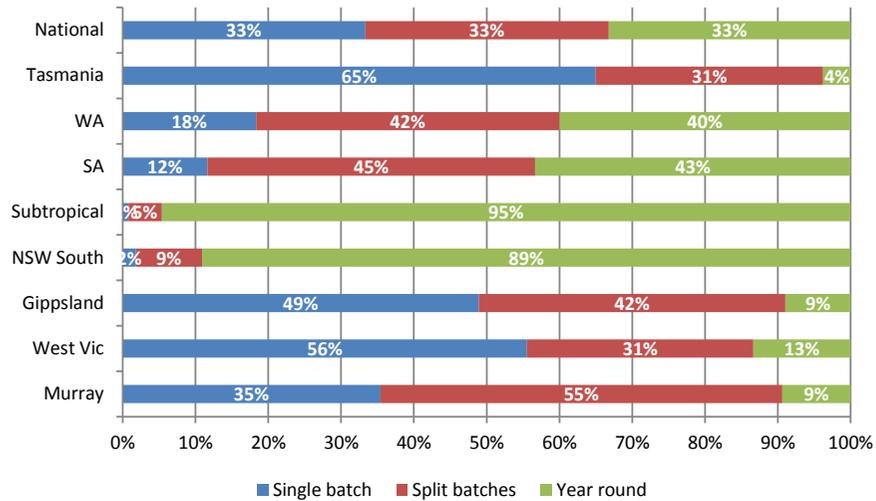
Feeding systems in each region

Source: NDFS 2012 (1002 survey farms)



Calving systems in each region

Source: NDFS 2012 (1002 survey farms)



Dairy farm business management

Dairy farming has always required multiple skills to manage the farm financials, animal health, milk quality and production, pasture growth and feed supply, and the people who work on and provide services to the farm.

Yet dairy farmers today face a more complex production environment than at any time in the past 30 years³¹, having to manage through volatility in currency rates and commodity prices, increases in the scale and intensity of their farming enterprises, and high public expectations around environmental stewardship.

Over the last decade farm businesses have had to survive uncertainties around the availability of key resources (water, grain then fibre), associated rises in the costs of inputs, then a reduction in income (following the reaction of international markets to the global financial crisis). This has tested the viability and resilience of every dairy farm business.

Models of ownership and operation

There is a range of alternatives for investing in the farm sector in the Australian dairy industry including: farm ownership, share farming, equity partnerships and leasing³². Encouraging sustainable working arrangements is central to Dairy Australia's Industry People & Capability group.

- 98% of Australian dairy farms are family-owned businesses (NDFS 2012). Farm ownership means the owner outlays capital for land, cows, equipment and machinery, benefits from all capital appreciation and has security of tenure (Dairy Australia 2007). However the relationship between the 'family farm' and 'farm family' can sometimes be blurred.
- Partnership is the most common form of dairy farm ownership with 84 % of farmers in a partnership with others (NDFS 2012). Partnerships are an agreement (usually between family members) to share profits from the business. They are relatively simple to administer and less expensive to operate than some other business structures.
- 54% of the people on farm are owner/managers or their partners (NDFS 2012). (See the 'People who work on farm' section for more detail.)

- About 17% of family farms are in sharefarming arrangements (NDFS 2012). This describes an arrangement where the farm owner and a 'sharefarmer' operate a dairy farm business together without forming a partnership or company (Dairy Australia 2007). Usually the parties provide different but complementary resources in the form of land, equipment, livestock and labour. Each party is recognised as an individual business entity although they work together on the one farm.

Farm owners enter sharefarming arrangements to increase their investment in land, become less involved in day-to-day operations, as a step towards farm succession, or to provide incentive for effort and skill. Sharefarmers take on this role as a step towards farm ownership (as they build wealth in cows and machinery) and to farm with some independent decision-making status.

True sharefarmers are independent contractors working under a commercial contract. People working in arrangements where owners control the way the work is performed are likely to be regarded as employees at common law – with the employer obliged to provide leave, superannuation, taxation and Workcover.

- Sharefarming is most common in Gippsland (26% of farms), Tasmania (23%), SA (21%) and Western Victoria (20% of farms) (NDFS 2012).
- The number of sharefarming arrangements tend to be sensitive to the financial climate, increasing in times of higher returns - although there was a marked increase in farms in sharefarming arrangements in WA from 2% in 2007 to 14% in 2012 (NDFS 2007-2012).
- There are a small number of corporate farms in Australia often operating as an aggregate of farms in an equity partnership or investment arrangement.

Most dairy farms are family-owned & operated

Source: NDFS 2012 (1002 farms)

Farms that are family-owned	98%
Corporate farms	2%
Farms with sharefarming arrangements	17%
Farmers working in partnership with someone else	84%

³¹ Steve Coats, Chris Phillips, Clive Noble and David Roche (2009). *Dairy Moving Forward, A National Research, Development and Extension Strategy*, Dairy Australia, September 2009

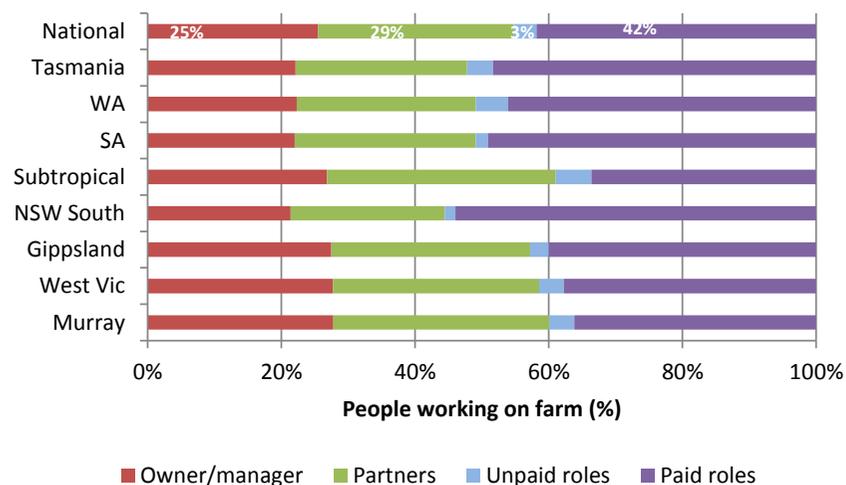
³² Dairy Australia (2007). *Dairy Farm Business Models, Insights to Dairy series DA0343*

Dairy farm businesses in Australia

54% of the people on farm are owner/managers or their partners

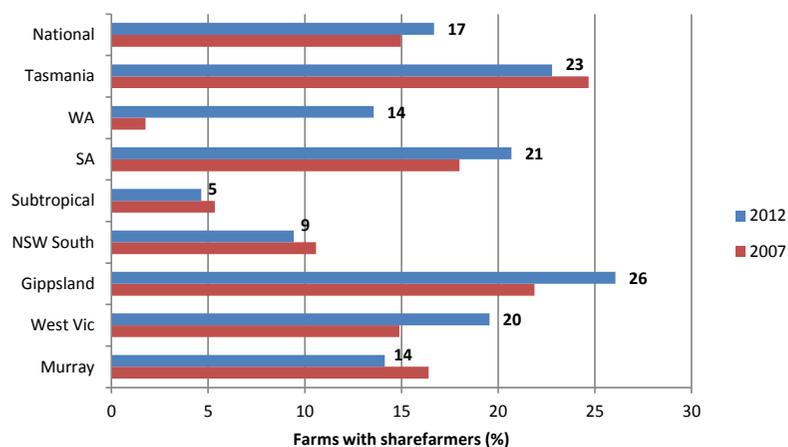
Source: NDFS 2012 (1002 farms)

Note the proportion in each role in the NDFS differs to the ABS census (see 'The people on farm')



Sharefarming has increased in WA, SA, Gippsland and Western Victoria

Source: NDFS 2007-2012 (about 1000 farms each year)



Farm business vision

Farmers are in farming for a reason. For many the main reasons are: to earn sufficient income to provide for an acceptable standard of living; to work full-time as a farmer; and to leave a business with the capacity to provide a viable career choice for the next generation (Wilkinson *et al* 2012³³).

Ideally the farming objectives would be formalised into goals and documented to provide a focus for managers to dynamically adjust strategies as the business builds in complexity. However day-to-day management often comes at the expense of thinking about and preparing the ground for 'what could be'.

Farm business segmentation based on attitude

How people think and feel about dairy farming affects the decisions they make.

- Dairy farm businesses can be divided into groups according to their attitudes around business orientation, aversion to risk, sustainable improvement, knowledge and self-reliance, intergenerational orientation, the 'dairy way of life', financial pressure, and farming tradition (Waters *et al* 2009³⁴).
- In 2009, 91% of farmers fell into four attitudinal groups: those established and stable; those growing the business for the kids; those open to change and those that love farming (Waters *et al* 2009). It is likely that individual farmers will move between groups over time as their perceptions change, however the groupings across the industry are likely to remain constant.
- When directly asked in 2012 to describe the phase their enterprise was in, 19% of farm businesses were expanding, 68% were in a steady state and 8% were winding down (NDFS 2012).
- Segmentation of Victorian farm businesses by other characteristics have also been described in terms of: expectations around farm productivity (page 27), economic security, how farmers respond to a downturn (page 40), and farmer use of services (page 73). Of these, farmers' aspirations for farm productivity and their perceived ability to achieve these aspirations are regarded as the most important (Wilkinson *et al* 2011³⁵).

³³ Wilkinson R, Barr N, Hollier C (2012). The choices farm families make, *Farm Policy Journal*, Vol 9 No. 2, Winter Quarter

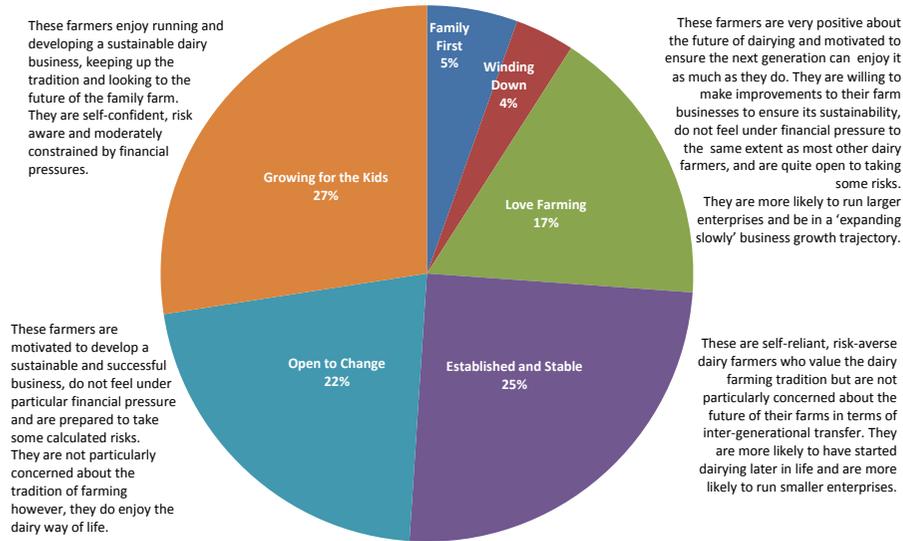
³⁴ Waters W, Thomson D, Nettle R (2009) *Extension Farming Systems Journal*, Vol 5(2):47-59

³⁵ Wilkinson R, Barr N and Hollier C (2011). *Segmenting Victoria's farmers*, Farm Services Victoria Division, Department of Primary Industries Victoria, Rutherglen, December

Dairy farm businesses in Australia

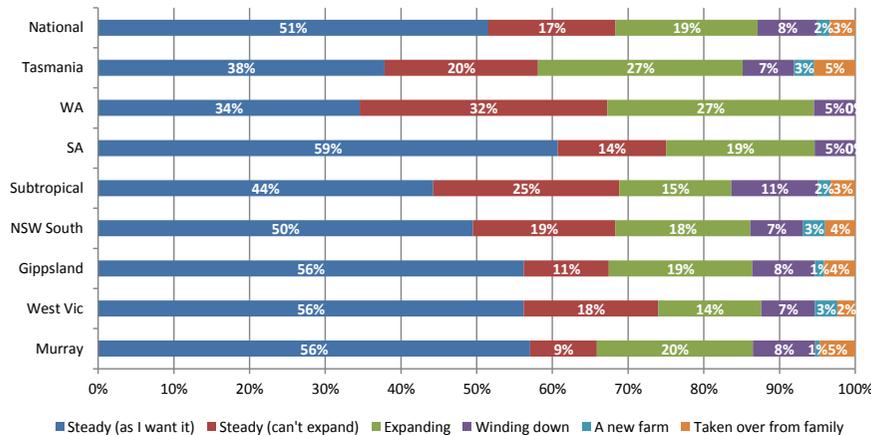
Farm businesses can be segmented based on attitudes to dairying

Source: Waters et al 2009 (survey of 450 dairy farms with more than 100 milking cows)



In 2012, 19% of farm businesses were in an expansion phase

Source: NDFS 2012 (1002 farms)



Workability of farm systems ('The Navigator')

Farm systems are chosen, resourced and implemented by people. The quality of decision-making and planning, the way technologies are adapted, and how risks and uncertainty are managed all shape the farm business³⁶. Good people management and processes are one of the keys to having smoothly-running, productive dairy farms. Farm owners and managers are responsible for setting-up systems that are workable and sustainable.

- In 2009 Dairy Australia's 'The People in Dairy' program developed a 'navigator' to help identify where the people issues are in the farm business.

The Navigator: Where in the business are the people issues?

Source: The People in Dairy

Business vision, leadership and culture	<p>Does the farm have a strategic vision that is realistic and well understood? Is there effective leadership and culture in the farm business? People work better if they know where the business is headed and have adopted the farm culture.</p>
Resources	<p>Does the farm have the resources needed to achieve its goals (e.g. equity and funds, infrastructure, stock, machinery, access to feed and water)? People become frustrated if they don't have the resources to fulfill their roles and complete tasks.</p>
Farming approach	<p>Has the farm established what is to be done, why, how and when (e.g. reviewed the farming system and documented business policies, operational plan and operating manuals)? Things happen more smoothly and safely if the farming system is adapted to suit people and well documented.</p>
Roles on the farm	<p>Have all the roles required on the farm been determined and the skills, knowledge and time involved been established (e.g. role of herd manager, detailed tasks and responsibilities, hours of work)? It is easier to find and retain the people the farm needs if the roles required to achieve all the work are well defined.</p>
People	<p>Are the right people doing the right jobs and are they clear about their responsibilities and tasks, which are documented in a position description and contract of employment, and they receive quality induction, appropriate rewards, regular performance reviews, good training and a plan for their future career and wealth creation.</p>
Working together	<p>Is there effective teamwork and communication? People work better together if there is effective communication, regular team meetings and a clear process for resolving disputes.</p>

³⁶ Dairy Moving Forward Committee (2010). Dairy Moving Forward - Research, development and extension priorities for the Australian dairy industry, Melbourne, December

Dairy farm businesses in Australia

HR (human resource) management on farm

Complying with the appropriate Australian industrial relations legislation is important to reduce any of the business risks around non-compliance. Since the beginning of 2010 nearly everyone employed on farm is subject to the conditions of the Pastoral Award 2010 (see Dairy Australia's The People in Dairy website www.thepeopleindairy.org.au).

Basic HR practices on farm involve having position descriptions that describe the role and its responsibilities, written employment contracts specifying the agreed conditions, and regular performance reviews.

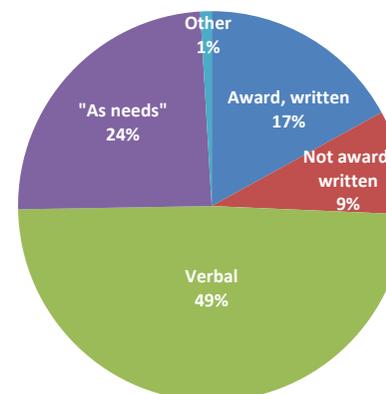
- The need to enable farmers to better manage industrial relations and other legislative requirements and be more confident to employ were seen as priorities for collective investment in the farm sector priority-setting exercise in 2005³⁷.
- In 2006, 26% of the arrangements in place around employment conditions were written (NDFS 2006).
- Most (71% of) farms in 2008 did not have written job descriptions for the people that worked in their businesses (NDFS 2008).
- Annual performance reviews were not routinely conducted on most (79% of) farms in 2009 (NDFS 2009).
- SA was in a stronger starting position than other dairying regions with more herds having written job descriptions (NDFS 2008) and conducting performance reviews for some or all of their people (NDFS 2009).
- Big herds were more likely to have written job descriptions than smaller herds (NDFS 2008) and were more likely to have conducted performance reviews (NDFS 2009).
- In 2007 more than half of farmers relied on their own knowledge (55%) or other farmers (6%) for information around employment issues (NDFS 2007). About one quarter sought advice on these issues from state farmer organisations, accountants, job network services or HR consultants.
- Many farmers find it is complex and time-consuming to set up employment arrangements that comply with Industrial Relations legislation. To assist them with this management area Dairy Australia developed 'The People in Dairy' online resources (with over 300 relevant templates and tools). This was publically accessible from the first week in June, 2008 and by the end of 2012 was recording

over 5000 visits per week (Dairy Australia 2012³⁸). HR training for dairy advisers has also been provided (see page 93).

- A folder of information and key documents (an Employment Starter Kit, or 'ESKi') is being piloted in 2013 in three dairy regions (Tasmania, Western Victoria and Gippsland) for farmers who prefer to use print and paper resources to achieve compliance with Industrial Relations legislation and to establish effective employment relationships with staff.

26% of employment conditions were written in 2006

Source: NDFS 2006 (740 farms that employ people)



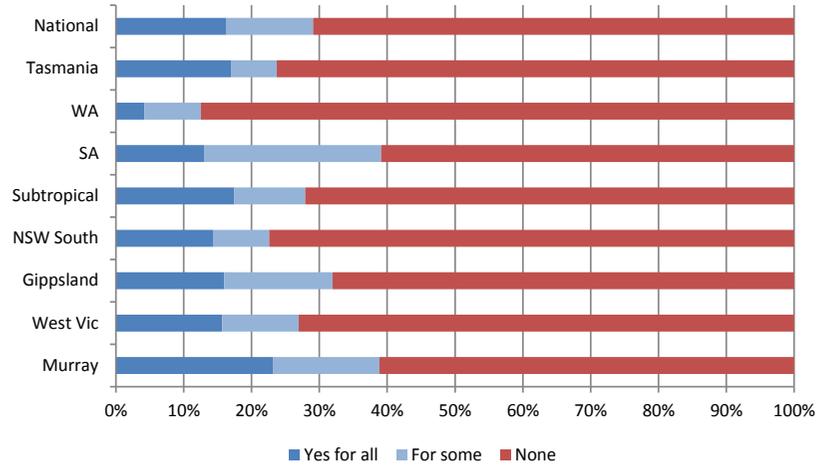
³⁷ Australian Dairy Industry Priorities for Collective Action for the Farm Sector, November 2005

³⁸ Dairy Australia (2012). The People in Dairy: 2006 to 2012 and beyond, Report to Dairy Australia prepared by The People in Dairy Core Group, November

Dairy farm businesses in Australia

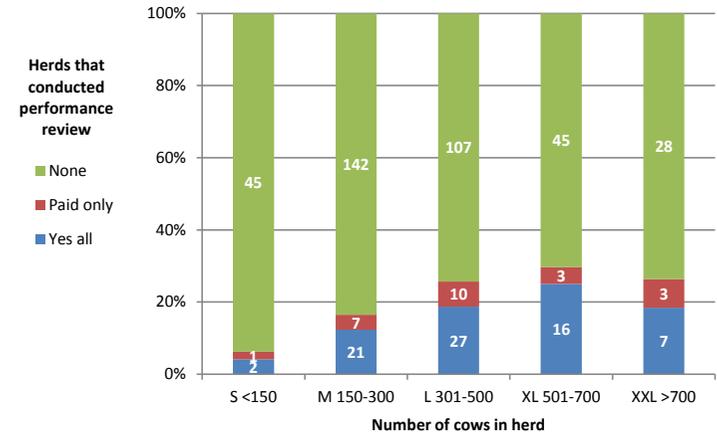
71% of farms did not have written job descriptions for workers in 2008

Source: NDFS 2008 (678 farms with more than 1 person working on the farm)



Big herds were more likely to have conducted performance reviews

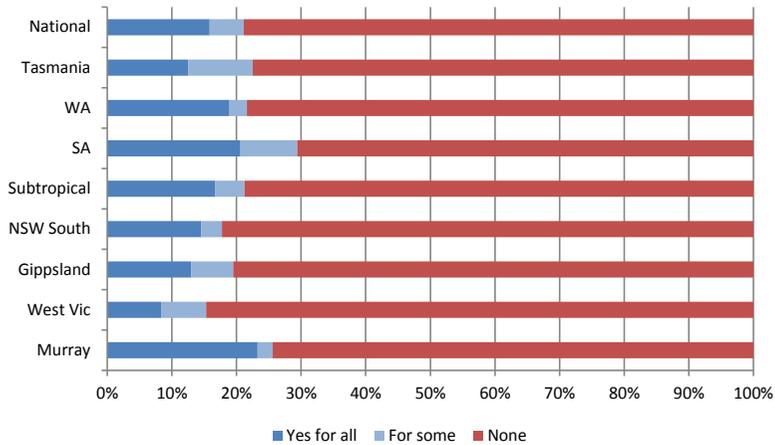
Source: NDFS 2009 (465 farms with more than 1 person working that responded & had data on herd size)



Note the bars show the number of farms

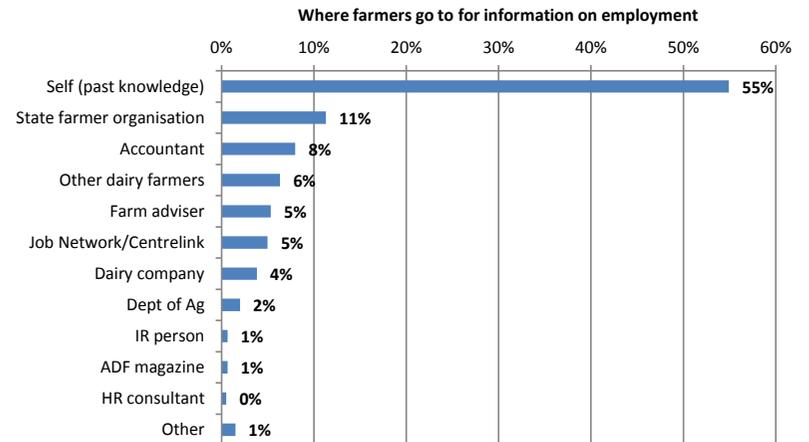
79% of farms had not conducted performance reviews for all workers in 2009

Source: NDFS 2009 (475 farms with more than 1 person working that responded)



In 2007 55% of farmers relied on themselves for information on employment

Source: NDFS 2007 (610 farms that employ people)



Workplace safety management

Society expects workplaces to be safe. All farm businesses have an obligation under law to provide a safe and healthy workplace for their employees, contractors, family, visitors and members of the public. An additional challenge with dairy farms is that the workplace is also the place where families live. Good management helps individual farms have a low business risk around their people resource and minimal injuries in the workplace.

- Although the cost of fatalities and injuries in dairy farming are hard to assess, Australian and international research consistently shows that the human and financial costs are high.
- The total economic cost of work-related injury (ranging from a short absence to full incapacity or death) to the Australian economy in FY08-09 was estimated to be \$60.6 billion of foregone economic activity, representing 4.8% of Gross Domestic Product (Safe Work Australia 2012³⁹). The unit cost per case in the Agriculture, Forestry & Fisheries sector was \$126,100, which was higher than the national average of \$99,100. (Note these costs do not include injury and death on farms not related to work.)
- In FY09-10 the median payment made for work-related injuries in 'Agriculture, Forestry & Fisheries' was \$6,600 compared to \$8,200 across all industries (Safe Work Australia 2013⁴⁰).
- A recent benchmarking study shows that dairy farms are doing lots of things right but there are real opportunities to improve (Lower *et al* 2011⁴¹). Dairy farmers are conscientiously applying engineering solutions such as roll-over protection structures (ROPS), but are much less likely to have implemented 'people management' elements of health and safety such as providing worker inductions and insisting on staff wearing helmets on quad bikes or observing speed limits.
- Some notable features about safety management on dairy farms are that: 39% of dairy farms have a documented health and safety plan; and farm workers are given a safety briefing prior to doing high risk jobs on 57% of farms (Lower *et al* 2011). Less than half of farmers (43%) with staff are providing safety inductions, and this is even lower (at 35%) for those using contractors.

³⁹ Safe Work Australia (2012). *The cost of work-related injury and illness for Australian employers, workers and the community: 2008-09*, Canberra, March

⁴⁰ Safe Work Australia (2013). *Compendium of workers' compensation statistics Australia 2010-11*, Canberra, March

⁴¹ Lower T, Fragar L, Temperley J (2011). *Health and safety on Australian farms*, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

- Dairy farmers are highly reliant on mobile phones for regular communication with their workers during the day, used for this purpose on 79% of farms (Lower *et al* 2011).
- Some notable features about the control of hazards on dairy farms are that: only 56% of farms using quad bikes require helmets to be worn; use of seatbelts is an accepted rule and practice on 32% of farms; and 50% of farms with silos have systems in place to prevent falls (Lower *et al* 2011).
- The level of helmet-wearing reported as part of the Sustainable Farming Families Program was even lower with 73% of dairy farmers never wearing a helmet and only 4.5% wearing one all the time (SFF 2012⁴²).
- 52% of dairy farmers said there was some form of impediment to making safety improvements on their farm, with cost and time being most commonly cited by 23% and 21% of farmers respectively (Lower *et al* 2011).
- Farmers in the agricultural industries generally see more barriers to working safely (such as time and cost) than benefits (DEEWR 2006⁴³). The mindset in 2006 tended to be that injury did not present a major personal threat, and that "safety equalled costs".
- Although farmers are keen to resolve any risk they have in non-compliance around WH&S, they are often uncertain about how to proceed and are very positive about the guidance that an expert adviser offers at a farm visit (Murray Goulburn FarmCare sessions 2012).
- Safe Work Australia has identified the 'Agriculture, Forestry & Fisheries' sector as a priority for interventions. Worksafe Victoria has been conducting farm inspections on dairy farms throughout Victoria since July 2012 specifically targeted at manual handling procedures with respect to livestock handling and loading facilities (Pauline Brightling personal communication).

Go to Workplace Health & Safety on page 84 for information about the level of work-related death and injury in the industry, and the physical and mental health of the people on farm.

⁴² Preliminary data from the National Centre for Farmer Health collected as part of the Sustainable Farming Families Program and provided by Susan Brumby and Ananda Chandrasekara in 2012

⁴³ DEEWR (2006). *Beyond common sense, A report on the barriers to adoption of safety in the agriculture industry*, Prepared by O'BrienRich Research Group on behalf of the Australian Safety and Compensation Council, Department of Employment and Workplace Relations, Canberra

Dairy farm businesses in Australia

The cost per injury in agriculture in 2010 was \$6,600

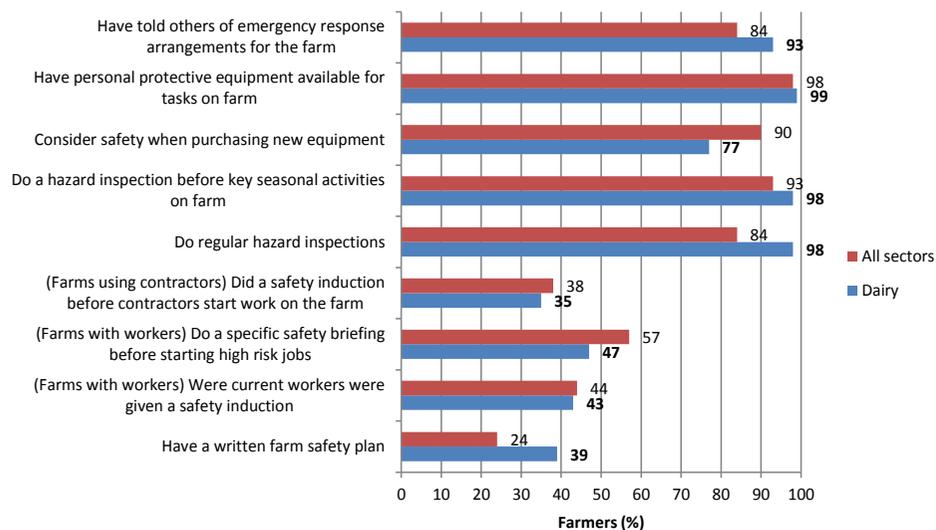
Sources: (1) Safe Work Australia 2012⁴⁴; (2) Safe Work Australia 2013⁴⁵ (131,170 worker's compensation claims of which 3,995 were in Agriculture, Forestry & Fisheries); (3) Fragar and Franklin 1999⁴⁶

What was costed	Cost per injury	Year	Agriculture, Forestry & Fisheries	All industries
Fatalities & injury	Unit cost ¹	2009	\$126,100	\$99,100
Injury	Median workers' compensation payment ²	2010 ^a	\$6,600	\$8,200
	Average workers' compensation payment ³	1999	\$6,920	\$5,635

(a) FY09-10 data reported in 2013

39% of dairy farms have a documented health and safety plan

Source: Lower et al 2011⁴⁷ (683 farms in 7 agricultural commodities across Australia, including 100 dairy, specifically grain, dairy, cotton, sugar cane, beef, sheep & horticultural industries)



⁴⁴ Safe Work Australia (2012). The cost of work-related injury and illness for Australian employers, workers and the community: 2008-09, Canberra, March

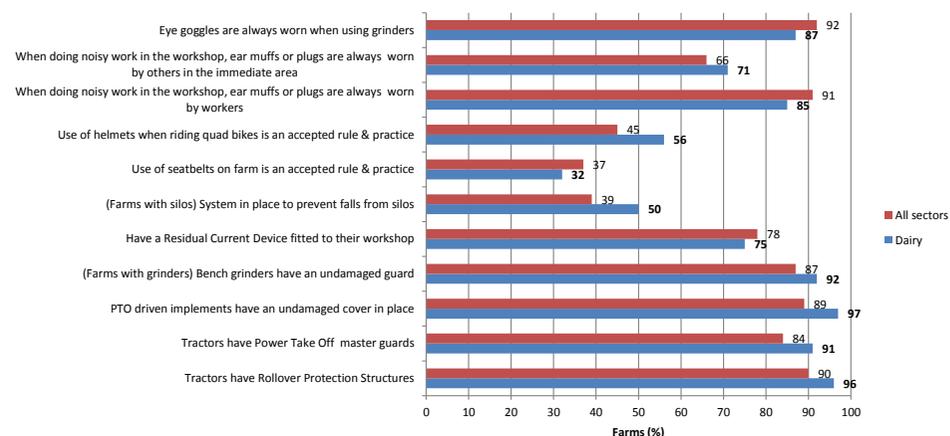
⁴⁵ Safe Work Australia (2013). Compendium of workers' compensation statistics Australia 2010-11, Canberra, March

⁴⁶ Fragar L, Franklin R (1999). Farmsafe Australia Goals, Targets and Strategy 1996-2001: Mid term review, RIRDC and the Australian Centre for Agricultural Health and Safety, University of Sydney

⁴⁷ Lower T, Fragar L, Temperley J (2011). Health and safety on Australian farms, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

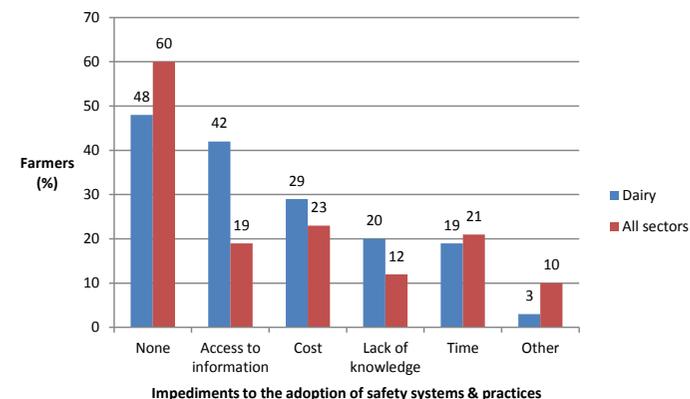
56% of farms using quad bikes require helmets to be worn

Source: Lower et al 2011⁴⁸ (683 farms in 7 agricultural commodities across Australia, including 100 dairy)



There were impediments to making safety improvements on 52% of dairy farms

Source: Lower et al 2011⁴⁹ (683 farms in 7 agricultural commodities across Australia, including 100 dairy)



⁴⁸ Lower T, Fragar L, Temperley J (2011). Health and safety on Australian farms, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

⁴⁹ Lower T, Fragar L, Temperley J (2011). Health and safety on Australian farms, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

WH&S observations from MG FarmCare sessions 2010-2012

Source: Murray Goulburn⁵⁰ (about 100 MG suppliers)

Views of the participant farmers	<p>Anxious about legal responsibilities which they find difficult to define</p> <p>Very keen to resolve any risk they have in non-compliance</p> <p>Uncertain about how to proceed</p> <p>Overwhelmed by the perceived size of the task</p> <p>Concerned about employees (both for their welfare AND about their preparedness to do what they are asked)</p> <p>Unaware of their responsibilities around contractors coming on the farm</p> <p>Extremely positive about the guidance that an expert adviser offers at a farm visit</p>
Observations of the team facilitating the pilot	<p>Farmers want a 'solution' to compliance problem (something of a silver bullet expectation)</p> <p>Farmers feel that getting compliance right is actually the full answer (when it is only a part of the story)</p> <p>Farmers equate 'ticking off' on WH&S as finishing it</p> <p>Younger farmers are more engaged with processes to work safely</p> <p>Corporate dairy farms have a safety culture much more embedded</p>

Farm profitability & potential for business growth

Farm scale and capacity

- Earning a sufficient income to provide an acceptable standard of living today and into the future is a common objective of farming families (Wilkinson *et al* 2012⁵¹). Farms need to be of a certain size to achieve this; to have the capacity to provide a standard disposable income and make investments that will generate a rise in real income the following year (with the authors using a 2% rise in income in their modelling).
- Wilkinson *et al* 2012 believe that (on average) farms in Victoria⁵² with an annual gross farm income of between \$400,000 and \$600,000 have a scale of operations that can meet this objective. Anything less is likely to result in compromises such as seeking off-farm income (rather than working full-time as a farmer) or low level of re-investment in the farm business which, over time, reduces its capacity to provide the next generation with a viable career choice.
- This theory about scale provides a challenging perspective as 85% of the 191 dairy farms in Victoria that the authors studied in 2010 had an annual gross farm income less than \$500,000 (Wilkinson *et al* 2011⁵³).
- The Horizon 2020 project⁵⁴ believes farms must develop the ability to successfully manage and grow dairy farm wealth over time through inevitable commodity cycles, moving on from specific technical challenges to create effective whole-business solutions (Horizon 2020⁵⁵). The challenge is to harvest the highs and manage the lows, rather than have a short-term preoccupation with risk.
- The Horizon 2020 working group identified a number of drivers for business improvement and farm enterprise wealth. They believe farm capital, confidence and capability need building in the Australian industry to improve the wealth and livelihoods of farmers. The strategic imperative for the industry is to create the necessary farm business 'fitness' and a positive and proactive culture.

⁵¹ Wilkinson R, Barr N, Hollier C (2012). *The choices farm families make*, Farm Policy Journal, Vol 9 No. 2, Winter Quarter

⁵² The study was based on 1300 dairy, sheep, beef, cropping, horticulture and other farms weighted to represent the profile of Victoria's farming population (of which 17% were dairy farms)

⁵³ Wilkinson R, Barr N, Hollier C (2011). *Segmenting Victoria's farmers*, Farm Services Victoria Division, Department of Primary Industries Victoria, Rutherglen, December

⁵⁴ The Horizon2020 project was commissioned by Dairy Australia and the Geoffrey Gardiner Dairy Foundation in 2012 (at a time when the world dairy market was a growing yet certainty of Australian dairy farmers about their future involvement was declining) to develop views about what the industry might look like in 5-10 years and explore the urgent medium and long term priorities for the industry.

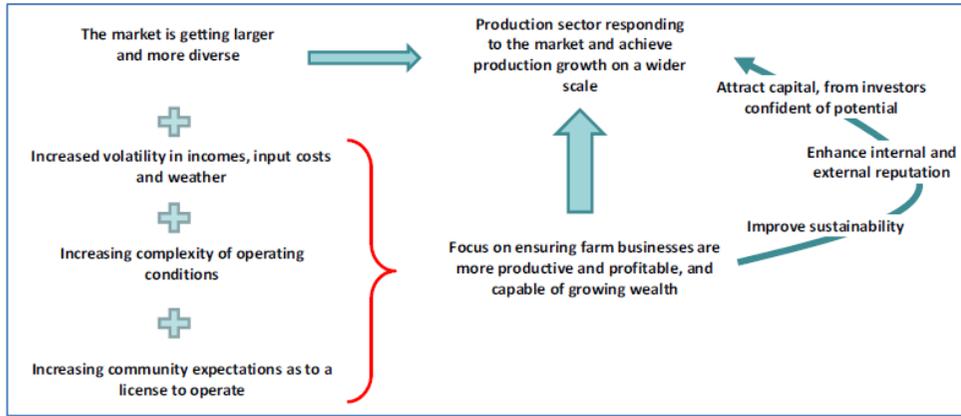
⁵⁵ Horizon 2020 (2013). *Final Report to the Dairy Australia Project Board from the Working Group*, Dairy Australia, January

⁵⁰ Murray Goulburn conducted MG FarmCare sessions between 2010 and 2012 exploring the barriers and opportunities to improve WH&S on farms with 100 suppliers. The sessions were facilitated by Mark Jago and Andrew Sullivan and included presentations, farm visits and focus group discussions.

Dairy farm businesses in Australia

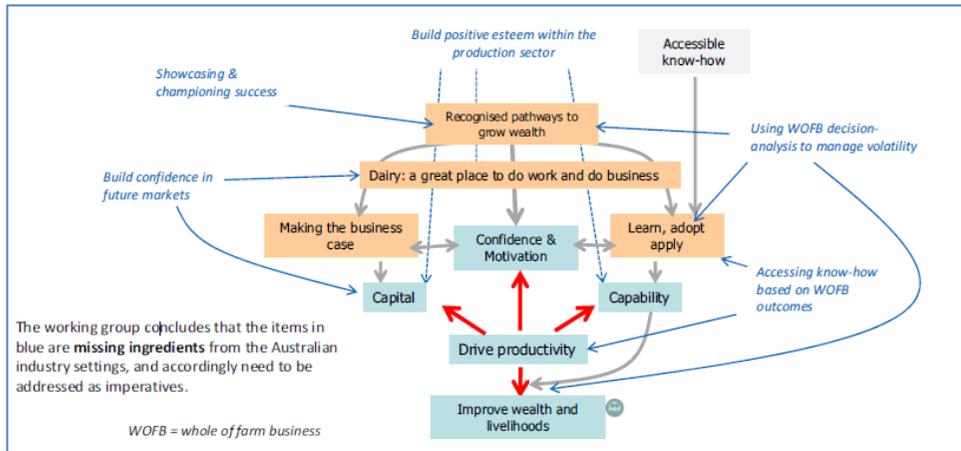
Farm businesses need to be productive, profitable, growing wealth

Source: Horizon 2020⁵⁶: page 74



Insights into the ingredients for improving farm sector wealth

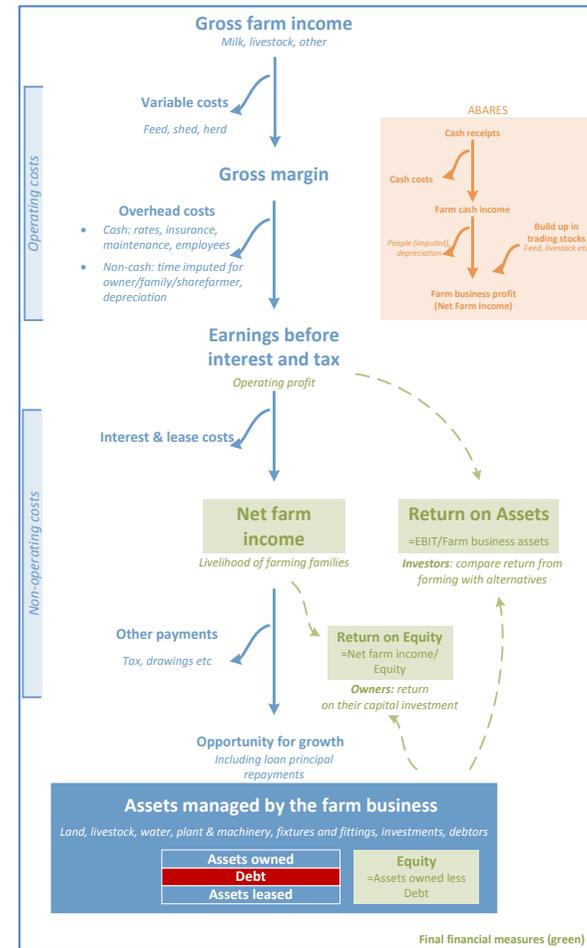
Source: Horizon 2020, 2013: page 9



Measures used to describe the financial health of farm businesses⁵⁷

Financial measures used to assess farm businesses

Source: Adapted from Dairy Industry Farm Monitor Project FY12-13 (original diagram by Bill Malcolm, University of Melbourne 2008)



⁵⁷ **Earnings Before Interest and Tax (EBIT)** indicates the operational efficiency (productivity) of the enterprise regardless of how it is financed. **Net Farm Income** measures the profitability of the business, an outcome important to the livelihood of farming families. **Equity** relates to the assets owned by the business and changes in equity describe business growth or contraction. **Return on Assets** is used to compare the return on farming with alternate investments. It became the final financial measure used by the Dairy Industry Farm Monitor Project in FY11-12 to indicate the overall efficiency of use of all the resources involved in the production system and not elsewhere in the economy.

⁵⁶ Horizon 2020 (2013). Final Report to the Dairy Australia Project Board from the Working Group, Dairy Australia, January

Dairy farm businesses in Australia

Fluctuations in farm income and profitability

Sources: ABARES 2006-2013⁵⁸ (300 farms from all dairy regions each year)

Average for farms ^a	FY05-06 ^b	FY06-07	FY07-08	FY08-09	FY09-10	FY10-11	FY11-12	FY12-13
Cash receipts	\$416,899	\$394,580	\$625,530	\$611,810	\$508,497	\$576,461	\$630,320	\$575,000
Milk	85%	85%	86%	87%	87%	88%	89%	89%
Livestock sales	10%	10%	6%	8%	8%	8%	7%	7%
Other	5%	5%	8%	5%	5%	4%	4%	4%
Cash costs^c	\$331,458	\$351,460	\$496,220	\$523,840	\$434,169	\$437,236	\$487,130	\$488,000
Fodder (variable)	28%	39%	37%	35%	30%	27%	26%	30%
Interest payments (non-operating)	10%	9%	9%	10%	11%	12%	11%	9%
Fertiliser (variable)	8%	6%	7%	7%	7%	7%	7%	7%
Repairs & maintenance (fixed)	8%	6%	7%	8%	8%	8%	9%	8%
Employees (fixed)	5%	6%	5%	5%	6%	6%	6%	6%
All other	41%	33%	35%	35%	38%	40%	41%	40%
Farm cash income	\$85,440	\$43,110	\$129,310	\$87,960	\$74,327	\$139,225	\$143,200	\$87,000
Build up in trading stocks^d	\$15,531	\$4,280	\$19,760	\$8,840	\$14,410	\$21,610	\$21,400	Pending
Non-cash costs	\$82,001	\$77,460	\$83,240	\$90,100	\$93,180	\$93,580	\$99,900	\$103,000
People imputed (fixed)^e	63%	69%	66%	64%	65%	64%	64%	65%
Depreciation (fixed)	37%	31%	34%	36%	35%	36%	36%	35%
Farm business profit (Net Farm Income)	\$18,970	\$-30,060	\$65,830	\$6,700	\$-4,440	\$67,249	\$64,700	\$-10,000
Capital value of assets owned	\$2.84 million	\$3.21 million	\$3.55 million	\$3.71 million	\$3.63 million	\$3.41 million	\$3.44 million	Pending
Farm debt	\$0.46 million	\$0.48 million	\$0.57 million	\$0.66 million	\$0.67 million	\$0.66 million	\$0.70 million	\$0.68 million
Equity percentage^f	84%	85%	84%	82%	82%	81%	80%	Pending
Return on assets (exc. capital appreciation)	2.3%	0.3%	3.7%	1.9%	1.6%	3.8%	3.8%	1.5%

(a) Medians would be a fairer summary measure as most distributions (eg for income, equity and debt) are skewed

(b) ABARES FY12-13 figures for cash costs & receipts are provisional

(c) The type of cost is shown in brackets as: fixed (operating), variable (operating) or non-operating

(d) The build up in trading stocks refers to change in value of the herd, feed reserves etc (figure is negative when inventories are run down)

(e) Imputed cost for the time put in by farm business manager (owner or sharefarmer), partners & family

(f) Equity of all assets owned by business (compared to all assets managed by business)

⁵⁸ Series of Australian Dairy Financial performance of dairy producing farms, ABARES, Canberra: Authors: Dale Ashton, June 2007; Daniel Mackinnon, September 2008; Surya Dharma, June 2009; Surya Dharma and Peter Martin, June 2010; Surya Dharma, June 2011; Surya Dharma, May 2012; Surya Dharma and Astrid Dahl, June 2013

Operational efficiency (productivity of farm & people)

Investment and innovation have been key to achieving the technological advances and subsequent productivity gains in the Australian dairy industry over the past decade (Sheng *et al* 2013⁵⁹). Farmers determine the rate of adoption of new technology through the choices they make and their capacity to invest.

Productivity is a measure of the physical output produced from a given amount of input. Although productivity and profitability are distinct concepts, technical improvements (through RD&E) that increase the ability of farms to transform inputs to outputs can increase profitability (Ha *et al* 2001). This section describes productivity in terms of gains in efficiencies on farm, the range of financial returns from operating farm businesses (using Earnings Before Interest and Tax), and what is understood by people productivity.

Farm productivity

Farm productivity needs to be high to provide a buffer against fluctuating returns and price squeezes. Furthermore it must be done in a way that complies with market expectations and reduces the environmental footprint of dairying.

- Australian dairy produce is competitive in the world market (ADIF 2013). At an average of just over US\$40 per 100kg of milk last year, Australian dairy farmers generally received a price comparable to the major producing countries (ranging in the last 7 years from a low of US\$24.98 in 2006 to a high of US\$43.32 in 2011).
- Productivity growth in the dairy industry has averaged 1.6% per year from FY78–79 to FY10–11 (Dharma and Dahl 2013). Before the year 2000, there had been growth in both inputs and outputs. Since 2000 the rate of growth for both inputs and outputs has continued to slow each year, and the annual growth in productivity has been attributed to changes in technology and management practices.
- Although annual productivity growth across the states ranges from 1.2% (in Victoria) to 1.9% (in Tasmania and WA), there are marked differences between the states in the way this has been achieved. In contrast to other states, there has been a growth in inputs in Victoria and Tasmania (Dharma and Dahl 2013).

⁵⁹ Sheng Y, Nossal K, Ball E (2013). Comparing agricultural total factor productivity between Australia, Canada and the United States, ABARES research presented to the 57th Australian Agricultural & Resource Economics Society, Annual Conference, Conference paper 13.5, Sydney, February

- The rate of Total Factor Productivity growth in Australia is slowing (Sheng *et al* 2013⁶⁰). Given that input costs are largely dictated by farm systems and factors external to the farm, pursuing growth through innovative technologies and practices is becoming increasingly important to maintain Australia's competitiveness.
- Farmers have implemented many technological changes in their dairy businesses over the past 10-15 years (Lubulwa *et al* 2007⁶¹; Ashton *et al* 2008⁶²; Mackinnon *et al* 2010⁶³; Dharma *et al* 2012⁶⁴). Herringbones and rotaries have replaced walk through sheds, supplementing the pasture-based diet with grain or concentrates has become the norm, and the production of on-farm silage has doubled. All these advances have required investment in infrastructure, equipment and skills to manage the new systems.
- There has been a steady increase in milk yield per cow and milk yield per hectare (the 'partial' measures of farm productivity) over the last 3 decades (TheCIE 2011). This is largely attributable to increased pasture productivity, use of supplementary feed, better conversion of feed to milk and cow genetics (TheCIE 2011).
- The primary reason farmers gave for feeding grain and concentrates in FY10-11 was to increase milk production (70%), with other common reasons being to fill gaps in pasture supply (12%) and assist in pasture management (4%) (Dharma *et al* 2012).
- Any of the feeding systems can be profitable (TasMilk60 2011⁶⁵). The study showed profit varied from year-to-year for all systems, where the variability within each feeding systems featured more than the difference between them.
- There are examples of the range in efficiency of pasture utilisation at all levels of grain/concentrate feeding (TasMilk60 2011). While feed conversion efficiency is highly variable for each level, it is generally higher on farms where more grain/concentrates are fed and higher total feed intakes achieved.

⁶⁰ Sheng Y, Nossal K, Ball E (2013). Comparing agricultural total factor productivity between Australia, Canada and the United States, ABARES research presented to the 57th Australian Agricultural & Resource Economics Society, Annual Conference, Conference paper 13.5, Sydney, February

⁶¹ Lubulwa M, Shafron W (2007). Australian dairy industry technology and farm management practices 2004-05, ABARE Research Report 07.9, Prepared for Dairy Australia, Canberra, April.

⁶² Ashton D, Mackinnon D (2008). Australian dairy industry: Use of technology and management practices on dairy farms, Research report 08.12, Canberra, December 2008

⁶³ Mackinnon D, Oliver M, Ashton D (2010). Australian dairy industry: technology and management practices 2008-09, ABARE-BRS report 10.11, Canberra, November

⁶⁴ Dharma S, Shafron W, Oliver M (2012) Australian dairy Farm technology and management practices 2010–11, ABARES, Canberra, August

⁶⁵ TasMilk60 (2011). Performance, profit and risk in pasture-based dairy feeding systems, Findings of the TasMilk60 study, Dairy Australia's Grains2Milk program, Melbourne

Dairy farm businesses in Australia

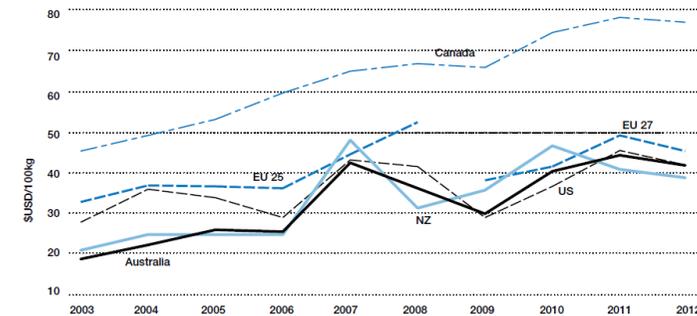
- Automation of dairy shed operations is highest on farms with rotary sheds (Mackinnon *et al* 2010). This shed type has the highest proportion of automated vat cleaning systems, automatic backing gates, cup removers, teat spraying, drafting gates, milk flow meters and individual cow bail feed.
- In FY11-12 about 63% of farmers were intending to make substantial management or technology changes to the farm system (Dharma *et al* 2012). The most common changes being planned (as in previous years) were new plant and equipment (13%), improvements to the dairy (13%), improving grazing and pasture management (12%) and changing the irrigation plant or layout (10%).
- There has been a shift over the years in what farmers believe is limiting their ability to use technology or change management practices. In 2005 40% of farmers indicated that workload or labour issues were limiting change on their farms (Lubulwa and Shafron 2007) whereas this had dropped to 16% by 2011 (Dharma *et al* 2012).
- In 2011, access to funding to increase borrowings and farmers' ages ranked equally as the top issues hindering change (Dharma *et al* 2012).
- Farm businesses can be segmented (differentiated) on farmer aspirations for farm productivity and their perceived ability to achieve these aspirations (Wilkinson *et al* 2011⁶⁶). Two factors strongly influence where farmers sit in the productivity segmentation⁶⁷: their age and capacity to invest. While younger farmers are more likely to profess interest in productivity objectives, the capacity to invest is strongly related to farm scale.
- The largest 'productivity' segment is of farmers seeking to increase productivity within the constraints of the existing scale of the farm business (Wilkinson *et al* 2011). This recognises that investment in future income growth is necessary for future income security, while facing a trade-off between investment and current consumption.
- The expansion-oriented farmer segment tended to have larger farms as measured by gross farm income (Wilkinson *et al* 2011).

⁶⁶ Wilkinson R, Barr N, Hollier C (2011). *Segmenting Victoria's farmers*, Farm Services Victoria Division, Department of Primary Industries Victoria, Rutherglen, December

⁶⁷ The 6 productivity segments are: 'selling out', 'phasing down', 'not productivity oriented', 'productivity constrained' (farmers interested in increasing farm productivity but doubting their capacity to), 'productivity but not scale oriented' and 'expansion oriented'.

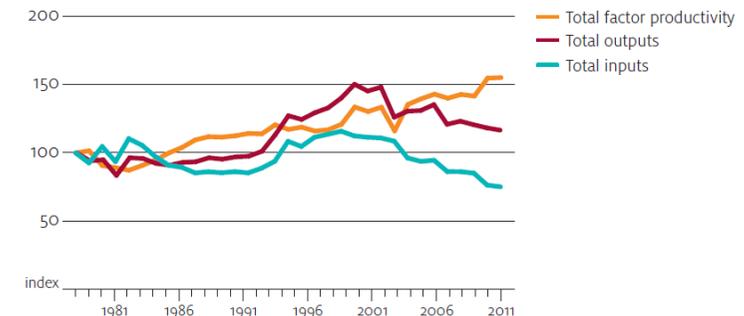
Australian farmers receive a milk price comparable to other countries

Source: ADIF 2013: Figure 2 International Farmgate milk prices, USD/100kg



Productivity increased while output & input growth declined since 2000

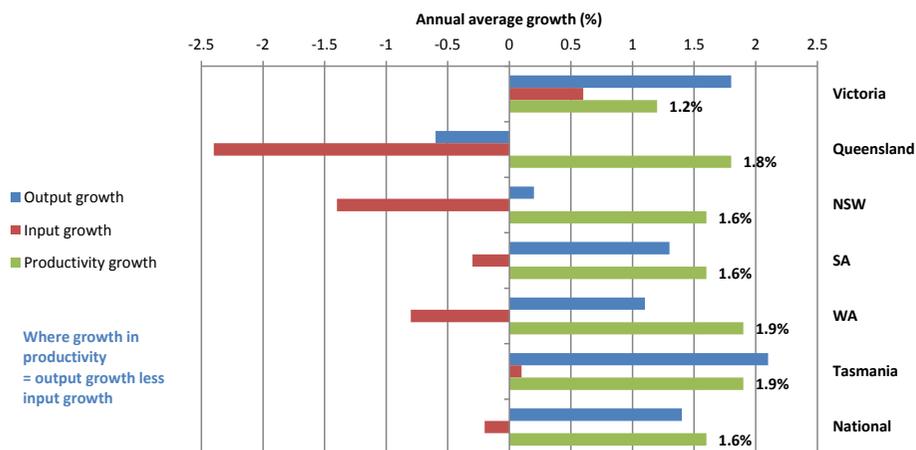
Source: Dharma and Dahl 2013 (about 300 farms each year): Figure 12 Trends in dairy total factor productivity, total inputs and total outputs



Dairy farm businesses in Australia

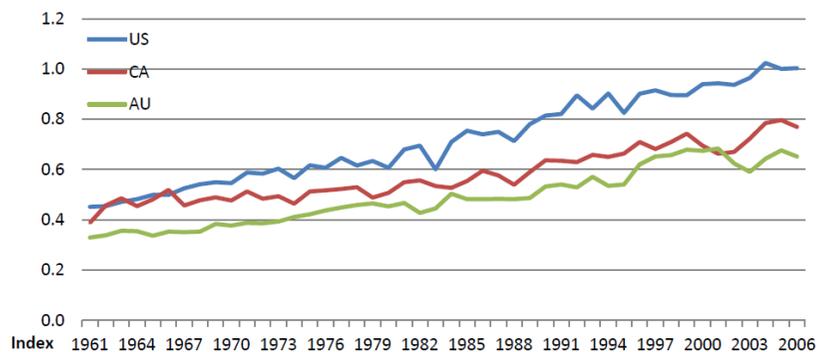
There are marked differences in the way the states achieved productivity growth

Source: Dharma and Dahl 2013 (about 300 farms each year)



The rate of Total Factor Productivity growth in Australia is slowing

Sources: Sheng et al 2013⁶⁸: Figure 1 Comparable agricultural TFP levels: Australia, Canada and the United States, 1961 to 2006



⁶⁸ Sheng Y, Nossal K, Ball E (2013). Comparing agricultural total factor productivity between Australia, Canada and the United States, ABARES research presented to the 57th Australian Agricultural & Resource Economics Society, Annual Conference, Conference paper 13.5, Sydney, February

Many technological advances have occurred over the past 10 years

Sources: Lubulwa et al 2007; Ashton et al 2008; Mackinnon et al 2010; Dharma et al 2012 (300 farms a year)

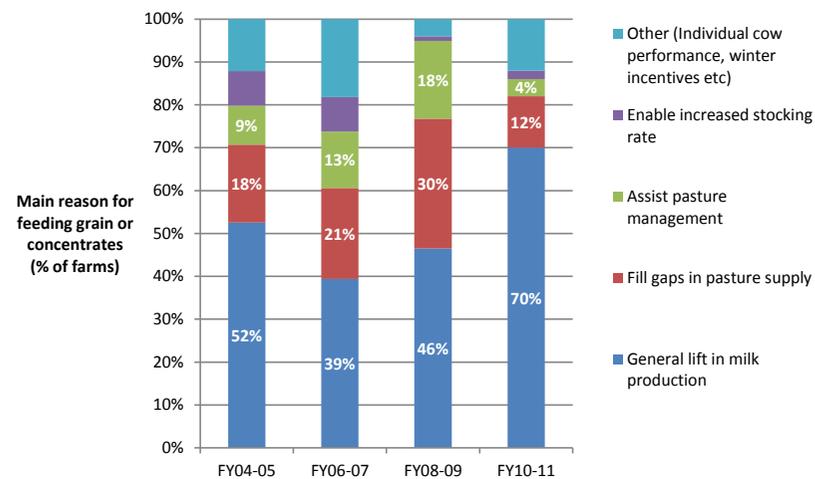
Average for farms	FY04-05	FY06-07	FY08-09	FY10-11
Milk yield (L/cow) ^a	4,985	4,949	5,674	5,635 (L/cow)
Milk production (L/ha)	8,706	8,560	9,999	9,991 (L/ha)
Stocking rate (cows/ha)	1.3	1.3	1.3	1.5 (cows/ha)
Feed grains or concentrates (farms)	94%	89%	98%	100% farms
Conduct soil tests (farms)	62%	58%	57%	55% farms
Silage cut (tonnes)	151	135	225	317 tonnes
Hay cut (tonnes)	135	54	73	135 tonnes
Have a rotary shed (farms)	10%	13%	14%	13% farms
Cows milked at peak season	188	211	213	202 cows
Milking time at peak season	138	131	148	133 mins
Operators at peak season	1.6	1.7	1.8	1.6 people
Cows calved to AI sires	100 cows	121 cows	118 cows	132 cows
Imputed % of milking herd ^b	51%	57%	54%	62%

(a) Although the average milk yield per cow provides context for the ADIS herds, they are different to the industry as a whole which were 4,983 in FY04-05, 5,182 in FY06-07, 5,691 in FY08-09 and 5,708 in FY10-11 (ADIF 2012)

(b) Calculated from Cows calved to AI sires / Milking cows in the herd

Grain & concentrates are mainly fed to lift milk production

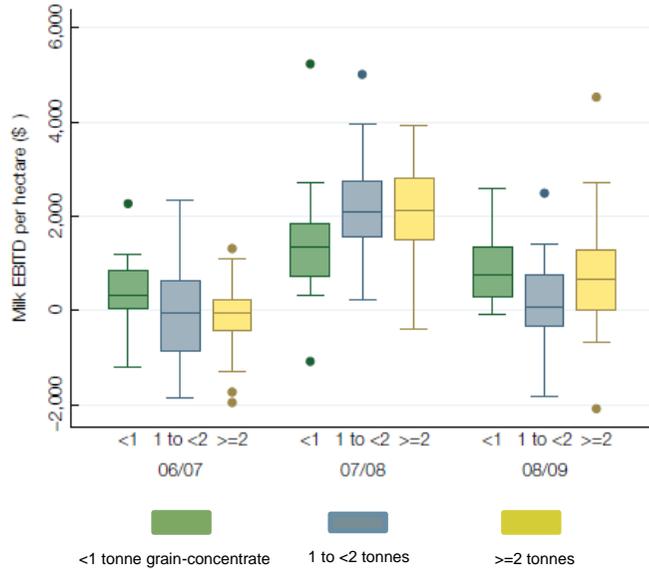
Sources: Mackinnon et al 2010; Dharma et al 2012 (about 300 farms each year)



Dairy farm businesses in Australia

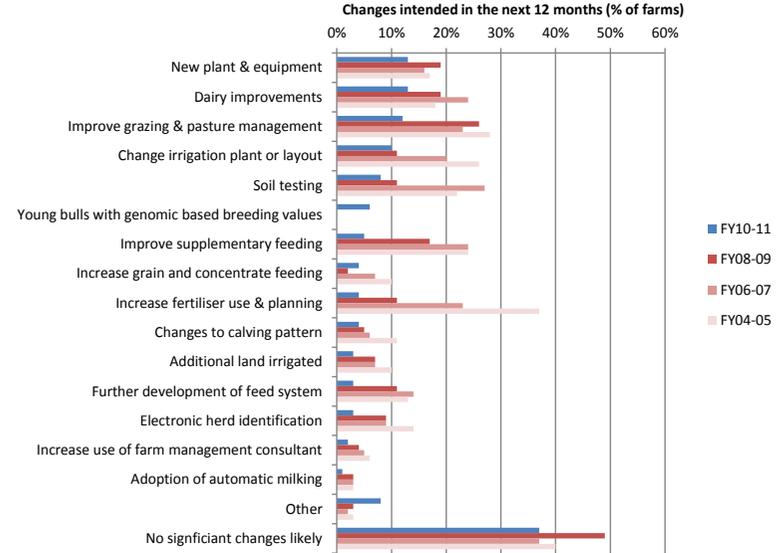
Variability in profit was more a feature within feeding systems than between them

Source: TasMilk60 2011 (60 Tasmanian herds surveyed in FY06-07, FY07-08 & FY08-09): Figure 27 Distribution of milk EBITD per hectare by concentrate feeding category and year



63% of farmers in 2011 intended to make management or technology changes

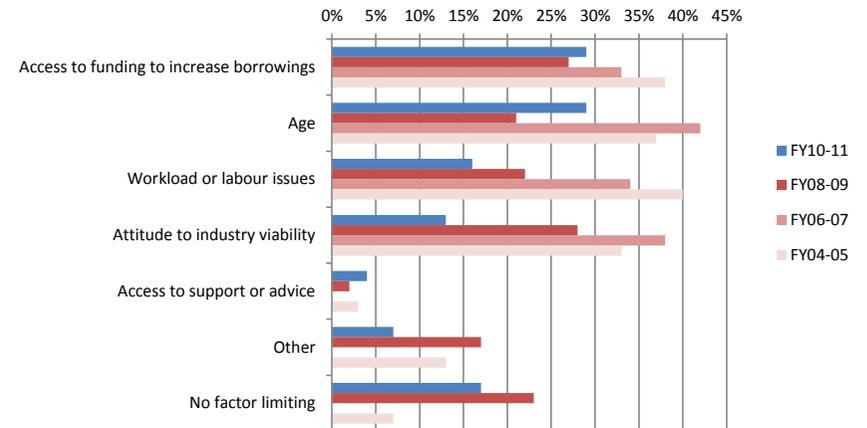
Sources: Lubulwa et al 2007; Ashton et al 2008; Mackinnon et al 2010; Dharma et al 2012 (300 farms a year)



Access to funding was limiting change on 29% of farms in 2011

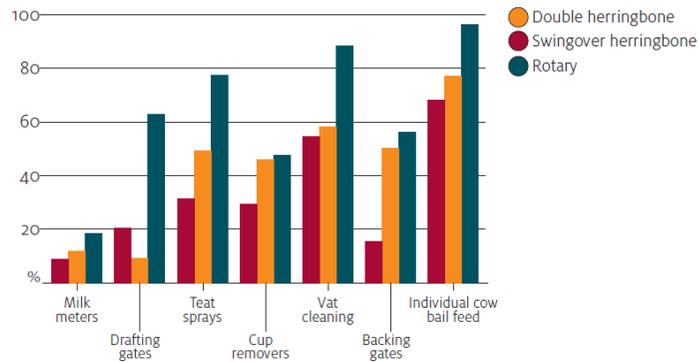
Sources: Lubulwa et al 2007; Ashton et al 2008; Mackinnon et al 2010; Dharma et al 2012 (300 farms a year)

Factors limiting management/technology changes (% of farmers)



Rotary dairies have the highest level of automation of shed operations

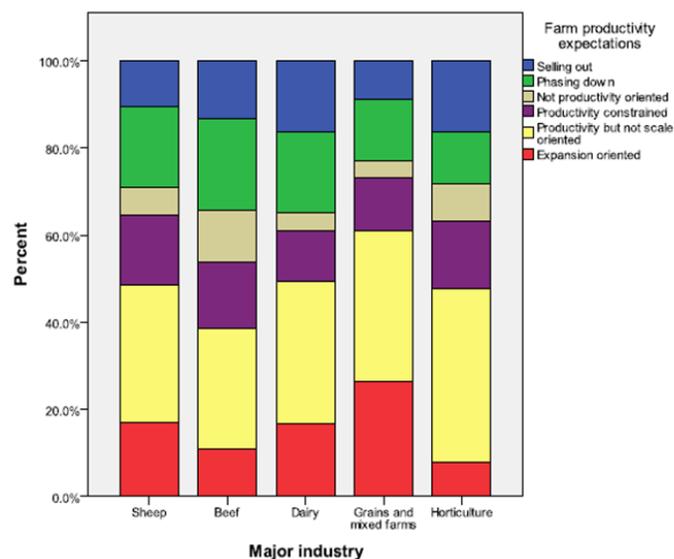
Source: Dharma et al 2012 (about 300 farms in FY10-11): Figure 13 Automation by shed type, 2010-11



Dairy farm businesses in Australia

A common mindset is to increase productivity within the existing scale of the business

Sources: Wilkinson et al 2011⁶⁹: (1300 Victorian farms surveyed in June 2010, including about 220 dairy farms):
Figure 22 Farm productivity expectations segmentation by industry



People productivity

The sustained success of farm businesses depends on the business vision, effectiveness and resourcefulness of the farm team, and their commitment to using the agreed farm procedures and achieving the desired standards. Measures of the cost of people in the farm business (such as 'Cows per FTE'⁷⁰ or 'Cost of labour per kg Milk Solids') do not assess the quality of the work or its impact on farm profitability and productivity.

- A major common factor in most successful enterprises in a study of 200 family farm businesses in NSW and Victoria was the attitude, knowledge and skills of the manager (Bone 2005^{71,72}). Coming up with new and more efficient ways of doing things was the highest ranking personal priority for knowledge issues on farms.
- A New Zealand study exploring the relationship between higher skills levels and farm profitability on dairy farms found employees' skills made a substantial contribution to the business (McLeish et al 2007⁷³). A highly skilled farm worker contributed an estimated additional \$100,000 to farm profitability⁷⁴ compared to one with poor skills (at one labour unit per 250 cows).
- A study based on 68 farms from the Dairy Industry Farm Monitor Project showed accepted measures of farm profitability (EBIT and Net Farm Income) are not significantly correlated with labour productivity (Cows per FTE) (Ford and Nettle 2010, unpublished). 'Cows per FTE' was more highly correlated with the overall number of cows (0.55) than anything else, suggesting there are some economies of scale in larger herds.
- The average cost of employees was higher on the Top 25% of DIFMP farms (ranked by Return on Assets) - being 9.5% of total farm costs compared to 8.5% of all farms, while the imputed cost of family labour is lower - at 13.0% of total farm costs compared to 16.9% (DIFMP 2013⁷⁵, also seen in DIFMP 2010, 2011, 2012).

⁶⁹ Wilkinson R, Barr N, Hollier C (2011). Segmenting Victoria's farmers, Farm Services Victoria Division, Department of Primary Industries Victoria, Rutherglen, December

⁷⁰ Full time equivalent (FTE) is a standardised people unit equal to 2400 hours a year (50*48)

⁷¹ Bone Z (2005). Farmers and learning: a critical interpretive analysis of the value perceptions of education and complementary factors to success, Extension Farming Systems Journal, Vol 1(1): 25-36

⁷² Citing findings from Chudleigh JW (1998). Farm Management Characteristics for Successful Farming, AIAS Farm Management Consultants' Conference, Sydney, September

⁷³ McLeish P, Gardner B, Waters W (2007). Reporting value added by agricultural training, An Internal Report prepared for AgITO, Wellington, NZ

⁷⁴ In this study employer feedback was used to evaluate the financial contribution of employees with good, moderate and poor ability across four different management areas (lameness, heat detection, mastitis prevention and pasture utilisation).

⁷⁵ DIFMP (2013). Dairy Industry Farm Monitor Project Victoria Annual Report 2012/13, Department of Environment and Primary Industries and Dairy Australia, Melbourne, August

Dairy farm businesses in Australia

Efficient ways of doing things is a priority for farmers

Source: Bone 2005 (a study of 200 family farms in NSW and Victoria)

Issue	All	Top 20% ^a	Bottom 20% ^a
Thinking up new & more efficient ways of doing things	30.9%	31.7%	44.3%
Utilizing the skills I already have	25.4%	25.0%	23.0%
Seeking out new technology	12.7%	13.3%	4.9%
Learning the secrets of really high production	12.1%	10.0%	8.2%
Learning how to use the computer for the internet	4.6%	3.3%	6.6%
Rely on my accountant & advisers to keep me up to date	3.9%	6.7%	1.6%
Regularly attend field days & seminars	3.3%	5.0%	4.9%
Reading rural newspapers, journals or magazines	2.9%	1.7%	1.6%
Contributing member to producer or marketing groups	2.3%	3.3%	4.9%
Enrolling in courses (any type suited to your needs)	2.0%	0.0%	0.0%

(a) Top 20% and Bottom 20% of farms refers to a Business Performance Indicator measuring the average turnover on assets; earnings on capital; debt to income ratio; operating costs to income; finance cost to income; nominal wealth change; and changes in business scale

EBIT is not significantly correlated with labour productivity

Source: Preliminary analysis by Rebecca Ford & Ruth Nettle 2010 (68 DIFMP farms in FY08-09)

	EBIT	No. cows	Cows per FTE	Cost structure	Return on assets	Debt ratio	Net farm income
No. cows	.286*						
Cows per FTE	.213	.548*					
Cost structure	-.975*	-.226	-.222				
Return on assets	.864*	.281*	.357*	-.862*			
Debt ratio	-.159	.032	-.121	.171	-.273*		
Net farm income	.950*	.231	.236	-.939*	.867*	-.451*	
Return on equity	.865*	.269*	.277*	-.859*	.915*	-.387*	.905*

*Statistically significant correlations between various measures of farm performance⁷⁶ are marked with an asterisk. Note correlation coefficients range in value from +1 and -1; a value of 1 (positive or negative) means the relationship between the variables can be perfectly described by a linear equation while values close to 0 suggest no such correlation between the variables.

⁷⁶ Cost structure = Variable costs as a percentage of total costs

Return on assets = EBIT as a percentage of total farm assets

Debt (servicing) ratio = Interest and lease repayment to creditors (cost/gross farm income)

Return on equity = Net farm income as a percentage of owner equity

Earnings Before Interest and Tax

EBIT⁷⁷ indicates the operational efficiency and earning potential of farm businesses regardless of how they are financed. It factors in costs of depreciation and imputed values of owner, partner and family labour.

- Although the operational efficiency and financial return of farms varies from year-to-year, the majority of farmers have been able to consistently generate profit through difficult market and environmental circumstances (DIFMP 2008-2013).
- Operating costs exceeded income in 43% of the DIFMP herds in FY12-13 (DIFMP 2008-2013).

Operating costs exceeded income in 43% of herds in Victoria in FY12-13

Source: Dairy Industry Farm Monitor Project 2007-2013⁷⁸ (74 herds in Victoria each year)



⁷⁷ Earnings before interest and tax = gross income less operating costs (variable and overhead)

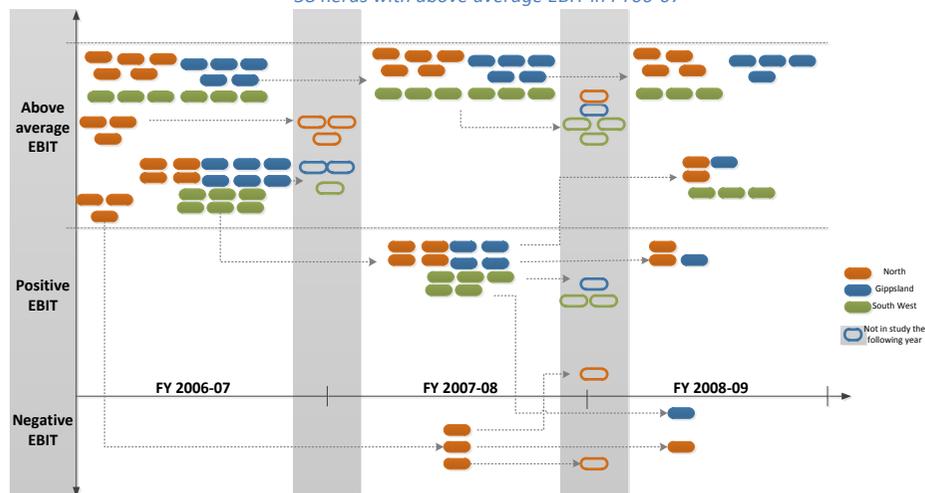
⁷⁸ Dairy Industry Farm Monitor Project Annual Reports 2007-08, 2008/09, 2009/10, 2011/12 & 2012/13

Dairy farm businesses in Australia

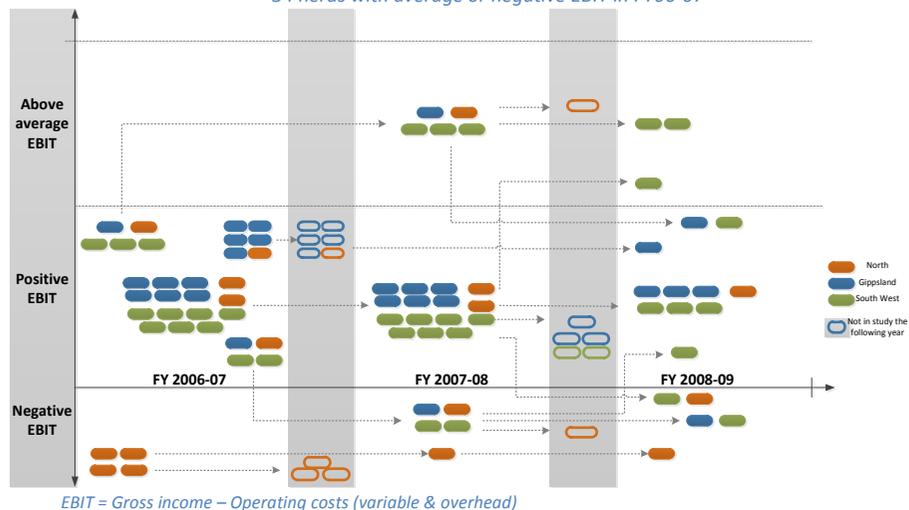
Operational efficiency of herds can vary year-to-year

Source: DIFMP report data FY06-07, FY07-08, FY08-09

38 herds with above average EBIT in FY06-07



34 herds with average or negative EBIT in FY06-07



EBIT = Gross income – Operating costs (variable & overhead)

Farm profitability (livelihood of farming families)

Farm businesses can grow through increases in equity and profit.

Net Farm Income⁷⁹ (or farm business profit⁸⁰) is the amount of money available for capital investment, loan principal repayments and tax. It provides for the livelihood of the farming family as well as for investment.

- Decision-makers from any of the attitudinal segments described by Waters *et al* 2009 (see page 18) can have highly profitable farms (TasMilk60 2011).
- Farm income and profitability vary from year to year (ABARES 2006-2012) and farm businesses need strategies for managing through this volatility. In FY12-13 39% of dairy farms had a positive farm business profit (ABARES spreadsheet 2013⁸¹, graph on page 35).
- Average farm cash income⁸² is estimated at \$87,000 in FY12-13, \$56,200 less than FY11-12 and below the 10-year average (Dharma and Dahl 2013). The reduction is attributed to a combination of lower milk prices, increased cash costs and little change in milk production in most dairy regions.
- The TasMilk60 study showed that farm profitability (be it high or low) is not very repeatable when milk prices fluctuate widely from year-to-year (TasMilk60 2011).
- Seasonal and financial issues are a contributing factor to mental health issues for dairy farms (Lower *et al* 2011⁸³, see page 89).

⁷⁹ Net farm income = EBIT less interest and lease costs

⁸⁰ Farm business profit = Farm cash income + (Build-up in trading stocks) less depreciation and the imputed value of the owner-manager, partner/s & family labour).

⁸¹ ABARES 2013 spreadsheet on Dairy industry selected physical and financial estimates, by state

⁸² Farm cash income = total cash receipts - total cash costs

⁸³ Lower T, Fragar L, Temperley J (2011). Health and safety on Australian farms, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

Dairy farm businesses in Australia

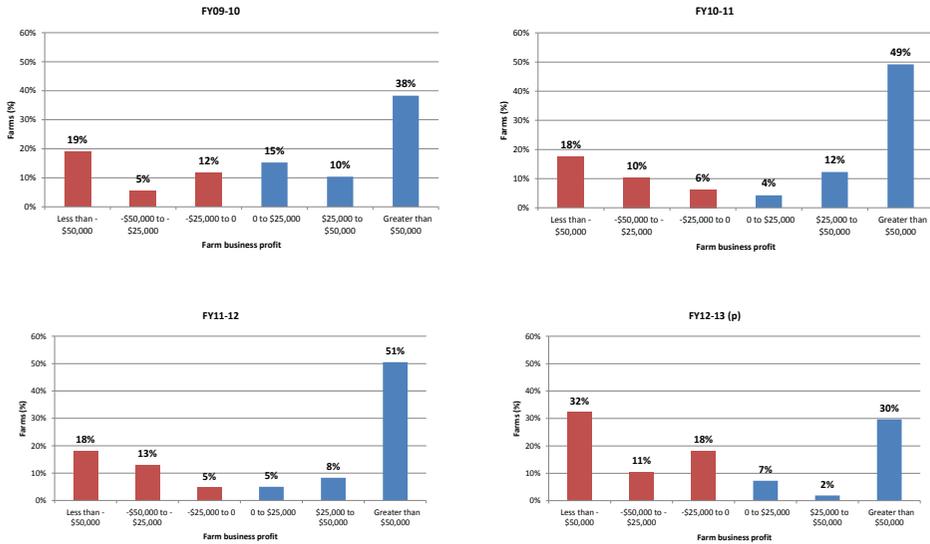
Farm business profit varies from year to year

Source: Dharma & Dahl 2013 (314 dairy farms): Figure 2 Farm cash income and farm business profit



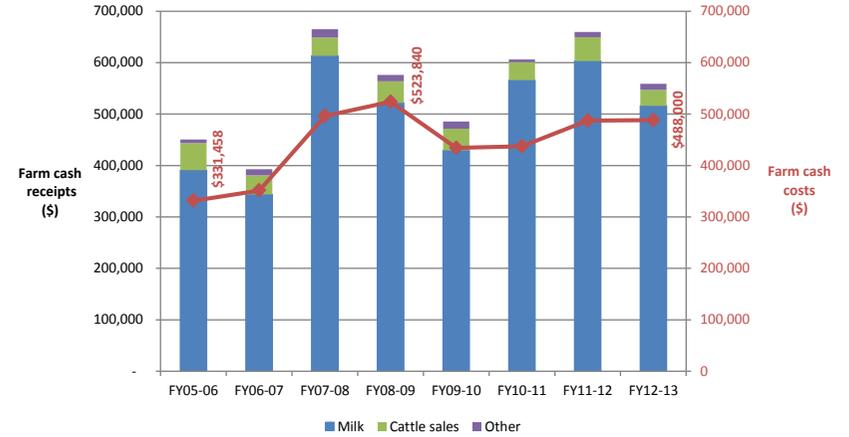
Farm business profit was positive on 39% of ADIS farms in FY12-13

Source: ABARES spreadsheet 2011 & 2013



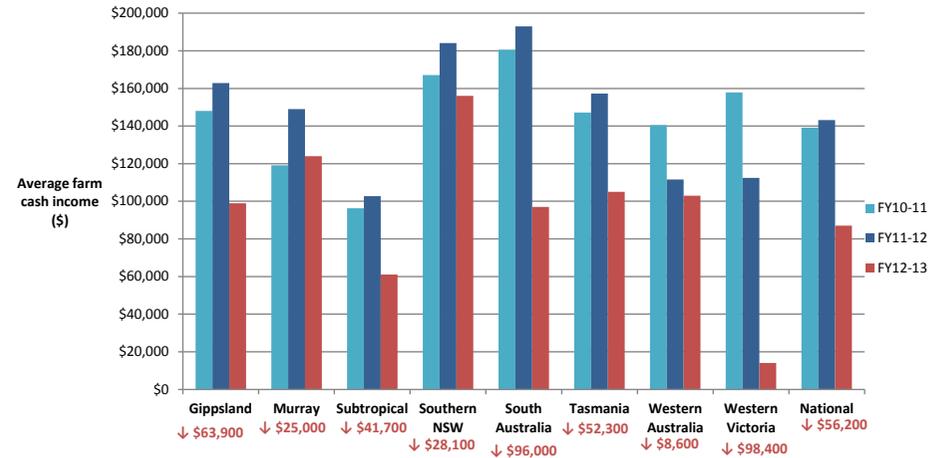
Farm cash income is the difference between cash costs & cash receipts

Sources: ABARES 2006-2013⁸⁴ (about 300 farms each year)



The average farm cash income fell in all regions in FY12-13

Source: Dharma & Dahl 2013 (about 300 dairy farms)



⁸⁴ As per footnote on page 26

Dairy farm businesses in Australia

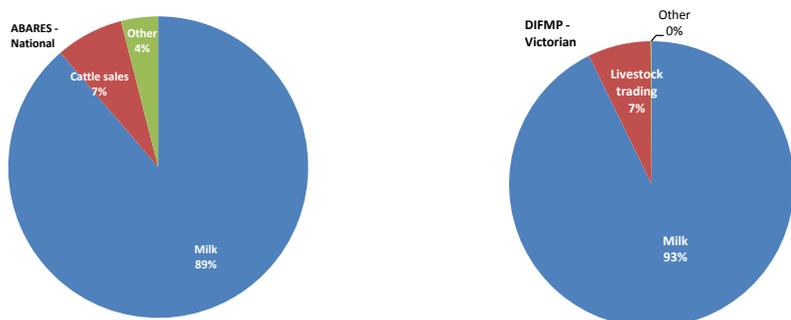
Farm revenue

Farm cash receipts⁸⁵ are the total of all revenues received by the farm business during the financial year.

- Milk is the main source of income although other sources such as the sale of feed or livestock are still important to farm businesses (Dharma and Dahl 2013, DIFMP 2013, TasMilk60 2011).
- Other agricultural industries tend to have higher off-farm sources of revenue than the dairy industry. The average off-farm income of owner-managers and their spouses in FY11-12 was \$18,500 for dairy farms compared to \$33,480 for beef farms (ABARES 2013⁸⁶).
- An average payment was made to dairy farms for the FY07-08 and FY08-09 of about \$15,500 through the Dairy Structural Adjustment Program and the Supplementary Dairy Assistance Scheme⁸⁷ (Martin *et al* 2010). The Dairy Adjustment Levy was terminated in February 2009, with consumers no longer having to pay this cost.

Milk is the main source of income

Sources: Dharma and Dahl 2013 (300 farms); DIFMP 2013 (75 Victorian herds)



⁸⁵ Farm cash receipts includes revenue from the sale of livestock, livestock products and crops, the value of livestock transfers off a property, revenue received from agistment, royalties, rebates, refunds, plant hire, contracts, sharefarming, insurance claims & compensation, and government assistance payments to the farm business.

⁸⁶ ABARES 2013 spreadsheet Selected physical and financial estimates for broadacre farms, by industry and state

⁸⁷ The Dairy Industry Adjustment Program started in 2000. A levy of 11 cents per litre on fresh milk was established by the Howard Government in 2000, raising around \$240M a year for 8 years to help dairy farm businesses transition from a regulated to a deregulated market.

Payments were made to eligible farmers over 8 years (ending April 2008) through the Dairy Structural Adjustment Program 2000 (29,946 farmers, \$1.6B) and the Supplementary Dairy Assistance Scheme 2001 (milk payment rights to 7,742 farmers of \$101.7M and discretionary payment rights to 662 farmers of \$18.4M).

Costs (cash & non-cash)

Costs to farm businesses are divided into categories, the most common being operating and non-operating (to describe operating efficiency), or cash and non-cash (for cash accounting⁸⁸).

Operating costs⁸⁹ are further divided into 'variable' costs which vary directly in relation to the scale and production system of the enterprise (such as feed, shed and herd costs) and 'overhead' (fixed) costs which are the same whether the operation is closed or running at capacity (such as depreciation, administration, repairs and maintenance). People are usually classed as an overhead, however employment of additional people to handle increases in scale or intensity of a farm business could be regarded as a variable cost.

People input into the farm system includes the salary and on-costs of paid employees (superannuation, WorkCover etc) and an allowance for the time owner-operators, family members or sharefarmers put into the business.

- Feed, be it purchased or home-grown, is the major cost to dairy farms (Dharma and Dahl 2013, DIFMP 2013, TasMilk60 2011).
- Proportionately feed represented 81-86% of variable costs on the Dairy Industry Farm Monitor Project farms across the three Victorian regions in FY12-13 (DIFMP 2013). The dollar amount spent on feed in FY12-13 was the highest it had been in four years.
- As well as representing about 81-86% of variable costs (above), feed in FY12-13 was estimated to be 30% of the cash cost to farms or 24% of the total costs to farms (calculated from ABARES data in Dharma and Dahl 2013).
- Typically interest payments are the second highest cash cost to farm businesses farm (Dharma and Dahl 2013).
- People (both the cost of employees and an imputed cost for the time owners, family members &/or sharefarmers put in) are the dominant fixed cost on farms - although this ranges widely from farm-to-farm (Dharma and Dahl 2013, DIFMP 2013, TasMilk60 2011). The imputed figure does not manifest as a cash cost.

⁸⁸ Cash costs are costs paid for in cash and recognized in the general ledger at the point of sale (as opposed to accrual-based accounting)

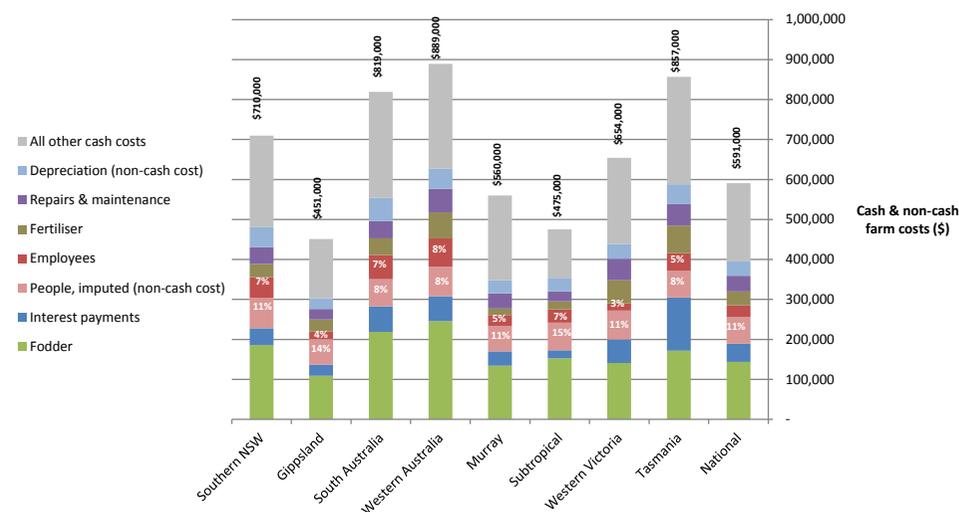
⁸⁹ Operating costs are recurring expenses related to the operation of a business.

Dairy farm businesses in Australia

- DIFMP increased the imputed value of peoples' input⁹⁰ from \$15 to \$20 per hour in FY09-10, then from \$20 to \$25 per hour in FY11-12 (DIFMP 2010, DIFMP 2012).
- People were estimated to be on average 16% of the total costs to farm in FY12-13: with an 11% non-cash cost for owners/managers/family and a 5% cash cost for 'hired labour' (calculated from ABARES data in Dharma and Dahl 2013).
- The people proportion of total costs did not change much across the years, ranging between 14% and 17% (calculated from Dharma and Dahl 2013).
- The people proportion of total costs was more variable across the regions, ranging from 13% in Tasmania to 21% in Subtropical Dairy in FY12-13 (calculated from Dharma and Dahl 2013). This was due more to the variation in the total cost spent on inputs, which is not surprising given people cost is fixed.

On average people were 16% of the total costs to farm businesses in FY12-13

Source: Calculated from data in Dharma and Dahl 2013 (about 300 farms)



Region	Farm costs (\$)	People costs (\$)	People costs (% of total)	Employee (%) (cash)	Imputed (%) (non-cash)
Southern NSW	\$710,000	\$128,000	18%	7%	11%
Gippsland	\$451,000	\$83,000	18%	4%	14%
South Australia	\$819,000	\$128,000	16%	7%	8%
Western Australia	\$889,000	\$145,000	16%	8%	8%
Murray	\$560,000	\$91,000	16%	5%	11%
Subtropical	\$475,000	\$102,000	21%	7%	15%
Western Victoria	\$654,000	\$90,000	14%	3%	11%
Tasmania	\$857,000	\$111,000	13%	5%	8%
National	\$591,000	\$96,000	16%	5%	11%

⁹⁰ Imputed people cost is the cost allocation for the time the owners, their families or sharefarmers spend in the business. DIFMP uses the Taking Stock method of valuing imputed labour at \$400 per cow less paid people OR \$25 per hour, whichever is greater.

Equity & debt (opportunities for growth)

Equity refers to the value of the assets owned by the business once all liabilities have been paid. It can increase through appreciation of assets or reduction in debt. Businesses with strong equity are able to invest in growth.

The Return on Assets⁹¹ enables the returns from dairy farming to be compared with alternative investments, while Return on Equity⁹² indicates the return the farm owners are getting from their capital investment.

- At 3.8%, the average rate of return to total farm capital (excluding capital appreciation) for dairy farms in FY11-12 continued to be higher than beef (0.9%) or 'wheat and other crops' (3.1%) (ABARES 2013 spreadsheets).
- The rate of return is expected to decline in all regions in FY12-13, while remaining positive in all regions except Subtropical Dairy (Dharma & Dahl 2013⁹³) and Gippsland (DIFMP 2013).
- The average Return on Assets and Return on Equity has decreased for the second consecutive year on Victorian farms (DIFMP 2008-2013, see graph next page).
- The capital value of dairy farms⁹⁴ in FY11-12 was \$3.4 million on average (Dharma & Dahl 2013), a fall from the peak figure of \$3.7 million in FY08-09 (Dharma & Martin 2010⁹⁵).
- Net capital additions to dairy farms averaged \$72 000 per farm in FY11-12, a figure slightly above the 10-year average (Dharma & Dahl 2013).
- Purchase of land continues to be the main way of increasing the capital value although this is confined to a relatively small proportion (9%) of farms (Dharma & Dahl 2013).
- Investment in farm improvements (buildings, irrigation systems, water supply structures and fencing) was about 33% above the 10-year average while investment in plant and equipment was 17 % below (Dharma & Dahl 2013).

⁹¹ Return on Assets enables the returns from dairy farming to be compared with alternative investments (Return on Assets = EBIT as a percentage of total farm assets)

⁹² Return on equity indicates the return the farm owners are getting from their capital investment (Return on Equity = Net Farm Income as a percentage of owner equity)

⁹³ Dharma S, Dahl A (2013). Australian dairy Financial performance of dairy producing farms, 2010-11 to 2012-13, ABARES research report 13.9, Canberra, June

⁹⁴ ABARES uses the owner-manager's valuation of the farm property. The valuation includes the value of land, residences and fixed improvements used by each farm business. 'Owned' capital excludes plant and equipment that is leased and "sharefarmed land".

⁹⁵ Dharma S, Martin P (2010). Australian Dairy 10.1 Financial performance of Australian dairy farms, 2007-08 to 2009-10, ABARES Report to Dairy Australia, Canberra, June

- The record level of investment in non-land capital was in FY08-09, driven by a combination of improved cash flow in FY07-08, low interest rates and investment incentives provided by the federal government through its 'Nation Building and Jobs Plan'⁹⁶ (Dharma and Martin 2010).
- On average Australian dairy farms had 80% equity in their businesses in FY11-12 (Dharma & Dahl 2013). The equity cited by ABARES appears to be based on the assets *owned* by the business, in contrast to other studies (the Dairy Industry Farm Monitor Project & Queensland Dairy Accounting Scheme) where equity refers to assets *owned and managed* by the business⁹⁷.
- The distribution of farm equity levels is skewed with the majority of farm businesses having high levels of equity - eg 72% of farm businesses had more than 70% equity in FY11-12 (ABARES 2013 spreadsheet).
- Farm debt also has a skewed distribution with 71% of dairy farms in FY11-12 having debts greater than \$200,000 (Dharma & Dahl 2013, Ashton 2007⁹⁸). In FY11-12 the average debt of dairy farm businesses was 52% higher than in FY05-06.
- Purchase of land accounts for the largest share of average farm business debt, with borrowings to provide working capital being the next largest (Dharma & Dahl 2013). The proportion of farm debt used for working capital has increased annually since FY07-08.
- Despite the rise in debt to fund land purchases and provide working capital in recent years, the equity level has remained at the 10-year average due to increases in land values (Dharma & Dahl 2013).
- The level of equity and average farm debt varies greatly between regions. On average Tasmanian dairy farmers had the lowest equity (at 65%) and highest farm business debt (\$1.7 million per farm) in FY11-12 due to high levels of new investment over the last few years (Dharma & Dahl 2013).

⁹⁶ The Australian Government's 'Nation Building and Jobs Plan' was offered to businesses committing to investing in depreciating assets between Dec-08 and Dec-09 to stimulate economic activity in the face of the global financial crisis

⁹⁷ The average equity level of Victorian farms participating in the DIFMP in FY12-13 was 61% (Department of Environment and Primary Industries, Dairy Industry Farm Monitor Project Victoria Annual Report 2012/13, State of Victoria, Melbourne, August)

⁹⁸ Ashton D (2007) Australian Dairy 07.2 Financial performance of farms to 2006-07, ABARE report to Dairy Australia, June

Dairy farm businesses in Australia

- 75% of the 75 Victorian farms participating in the Dairy Industry Farm Monitor Project in FY12-13 had a negative return on equity (DIFMP 2013). This means their enterprises are worth less than a year ago in net terms (often because the costs associated with accessing additional capital exceeded the returns generated by this capital).

Returns on dairy farms in FY11-12 were higher than other broadacre enterprises

Sources: ABARES 2013 spreadsheets^{99, 100}

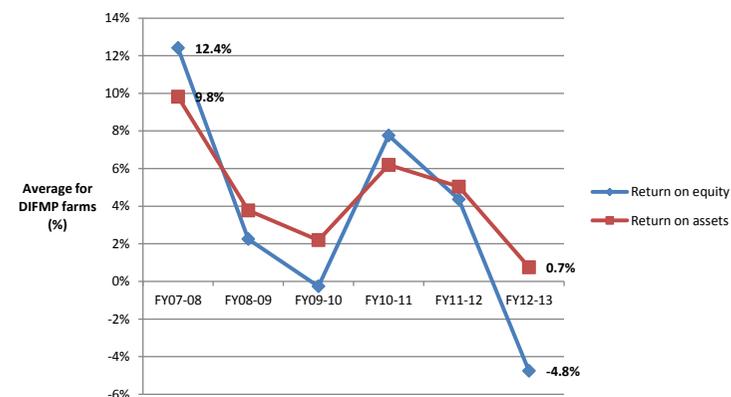
Financial indicator averages for FY11-12	Dairy	Beef	Wheat & other crops
Estimated population	7,233 farms	19,923 farms	9,360 farms
Farm business profit	\$64,680	\$9,910	\$64,460
Farm capital value ^a	\$3.46 million	\$3.86 million	\$5.11 million
Farm debt	\$0.70 million	\$0.30 million	\$1.06 million
Equity ratio	80%	92%	79%
Net capital additions	\$70,650	\$74,680	\$106,930
Rate of return ^b	3.8%	0.9%	3.1%

(a) Farm capital refers to the value of all the assets used on a farm, including the value of leased items but excluding machinery and equipment either hired or used by contractors

(b) Rate of return excluding capital appreciation

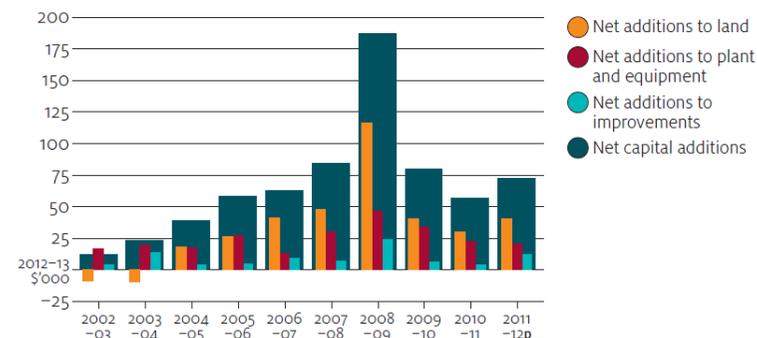
Returns have decreased on average on Victorian farms since 2010

Source: DIFMP 2008-2013 (about 74 farms each year)



Purchase of land continues to be the main way of increasing capital

Source: Dharma & Dahl 2013¹⁰¹ (300 dairy farms): Figure 7 Net capital additions



⁹⁹ ABARES 2013 Selected physical and financial estimates for wheat and other crops industry farms, by state for 2010-11, 2011-12, 2012-13

¹⁰⁰ ABARES 2013 Dairy industry selected physical and financial estimates, by state for 2010-11, 2011-12, 2012-13

¹⁰¹ Dharma S, Dahl A (2013). Australian dairy Financial performance of dairy producing farms, 2010-11 to 2012-13, ABARES research report 13.9, Canberra, June

Dairy farm businesses in Australia

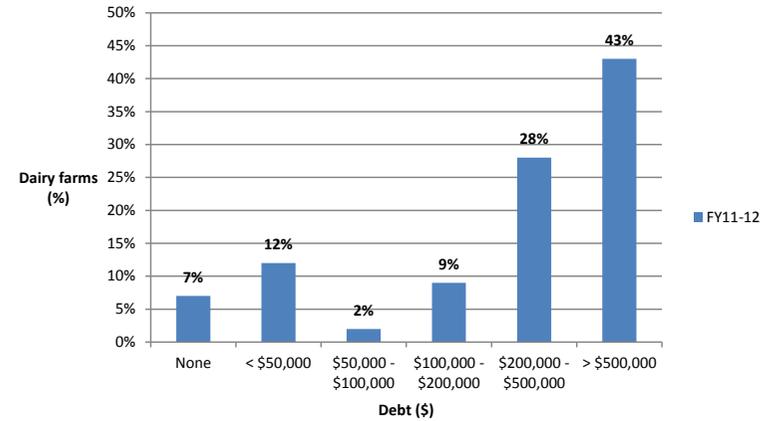
Increases in land values have been sustaining farm business equity

Source: Dharma & Dahl 2013 (about 300 dairy farms): Figure 9 Farm business debt and land values



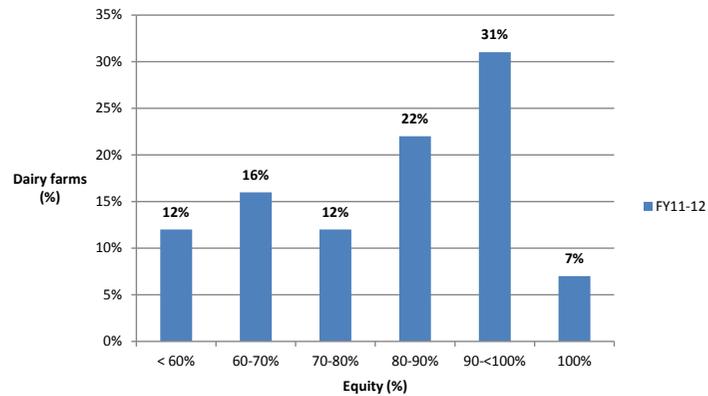
Debt on dairy farms has a skewed distribution

Sources: ABARES 2013 spreadsheets



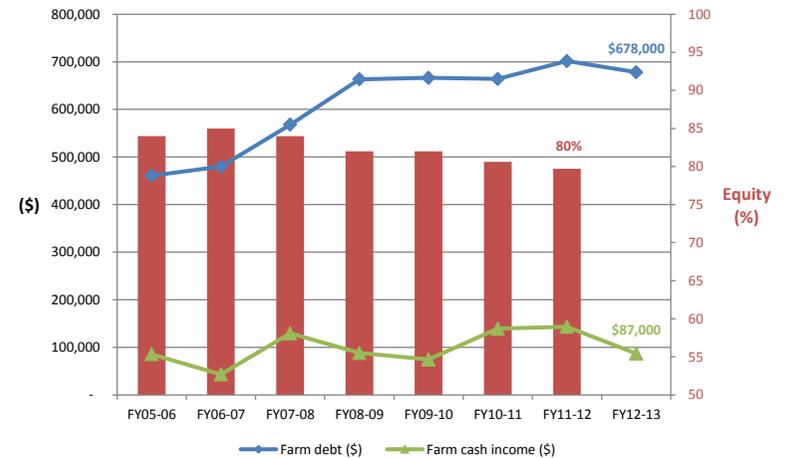
Most dairy farm businesses have high levels of equity

Sources: ABARES 2013 spreadsheets¹⁰²



The average debt on dairy farms was 52% higher in 2012 than 2006

Sources: ABARES 2006-2013¹⁰³ (about 300 farms each year)



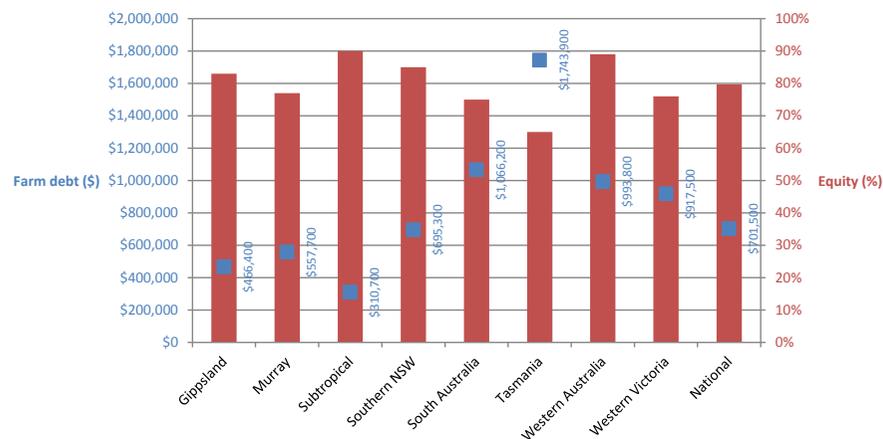
¹⁰² ABARES 2013 Dairy industry selected physical and financial estimates, by state for 2010-11, 2011-12, 2012-13

¹⁰³ As per footnote on page 26

Dairy farm businesses in Australia

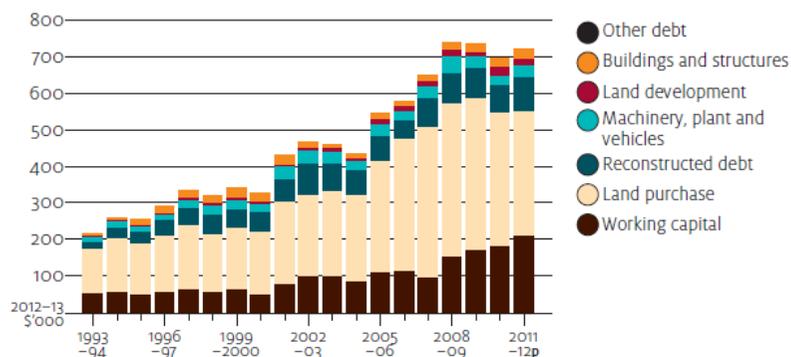
Equity and debt levels varied between regions in FY11-12

Source: Dharma & Dahl 2013 (300 dairy farms)



Most farm debt is spent on land purchases and working capital

Source: Dharma & Dahl 2013 (about 300 dairy farms): Figure 10 Composition of farm business debt



Managing risk (farm business sustainability)

Managing risk is an important aspect of the profitability and sustainability of farms - "it is through managing risk that greater profits can be made" (DIFMP 2011). Investment in the farm business can be a form of risk mitigation when it involves spending to secure a future position, shifting the focus from maximising profits in the short-term to improving farm profitability and growth in the longer term.

- The level of business risk varies between the regions. The tighter the financial situation (high debt servicing ratios, low equity and low cash reserves), the more vulnerable the business is to income reductions such as drops in milk price (DIFMP 2011).
- Lower interest rates in FY11-12 and FY12-13 meant the proportion of farm cash receipts needed to fund interest payments on debt decreased, reversing an upward trend between FY01-02 and FY09-10 (Dharma and Dahl 2013). The average debt services ratio in FY12-13 was 7.7%, slightly lower than the 10-year average of 8%.
- The Dairy Industry Farm Monitor Project shows an overall drop in the average equity on Victorian farms from 71% in FY07-08 to 61% in FY12-13 (DIFMP 2008-2013).
- More could be known about how people manage through volatility. There is the suspicion that in 'hard' years the costs for depreciation and family labour are not fully included in the reckoning and the shortfall is then made-up in the 'good' years.
- Segmentation of Victorian farms based on preferred strategies for dealing with a period of lower farm income¹⁰⁴ found many farmers are willing to live on less in hard times and many prioritise farming over income security (Wilkinson *et al* 2011¹⁰⁵).
- 18% of farm businesses held Farm Management Deposits in FY12-13, an increase of 2% on the previous year (Dharma and Dahl 2013). The value of deposits held varies greatly from year to year, within and between regions (ABARES 2006-2013).

¹⁰⁴ The 6 'downturn' segments were: work off-farm to maintain family income, work off-farm to invest in the farm, cut investment to maintain family income, cut investment to keep farming, live on less to invest in the farm, and live on less to keep farming

¹⁰⁵ Wilkinson R, Barr N, Hollier C (2011). Segmenting Victoria's farmers, Farm Services Victoria Division, Department of Primary Industries Victoria, Rutherglen, December

Dairy farm businesses in Australia

- Farms that are “not intending to grow” have more FMDs (both in value and proportion of farms holding FMDs) than those farms that are “intending to grow” (Dharma and Dahl 2013).

The debt services ratio decreased in FY11-12 & FY12-13 due to lower interest rates

Source: Dharma & Dahl 2013 (300 dairy farms): Figure 11 Ratio of interest payments to total cash receipts



Financial risk indicators for dairy farm businesses in Victoria

Dairy Industry Farm Monitor Project 2008-2013¹⁰⁶ (about 74 herds in Victoria each year)

Year	Cost structure ^a	Debt per cow	Debt services ratio ^b	Equity	Feed (ME) imported ^c
FY07-08	69%	\$3,100	8%	71%	36%
FY08-09	83%	\$3,124	10%	73%	38%
FY09-10	87%	\$3,734	13%	64%	34%
FY10-11	73%	\$3,743	12%	68%	35%
FY11-12	58%	\$3,608	12%	65%	43%
FY12-13	60%	\$3,952	13%	61%	44%

(a) Cost structure = Variable costs as a percentage of total costs

(b) Debt services ratio = Interest and lease costs as a percentage of gross farm income

(c) Percentage of feed imported (as a percentage of total Metabolisable Energy)

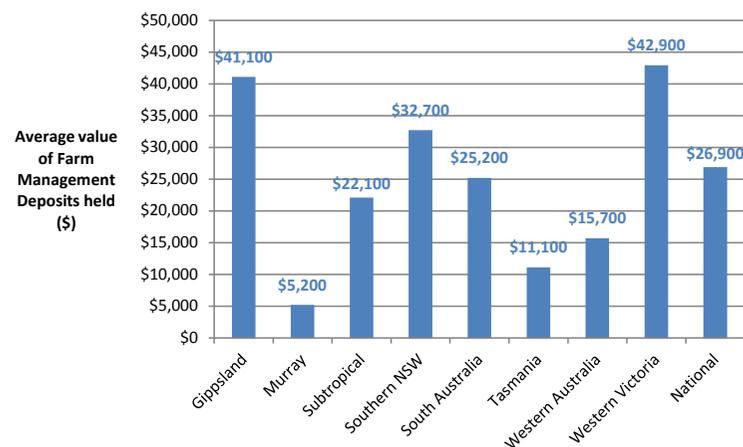
The value of FMDs held varies greatly from year to year

Sources: ABARES 2006-2013¹⁰⁷ (about 300 farms each year)



The value of FMDs held varies greatly between the regions

Source: Dharma & Dahl 2013 (300 dairy farms)



¹⁰⁶ Dairy Industry Farm Monitor Project Annual Reports 2007-08, 2008/09, 2009/10, 2011/12 & 2012/13

¹⁰⁷ As per footnote on page 26

Dairy farm businesses in Australia

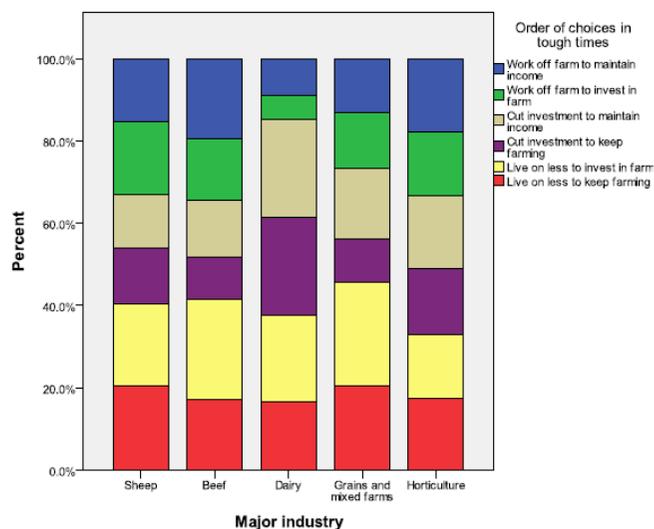
Farms that are “not intending to grow” have more Farm Management Deposits

Source: Dharma & Dahl 2013 (300 dairy farms)

Farm businesses in FY11-12	Farms with FMDs	Average value of FMDs
ALL farms	18%	\$26,900
Growth		
Intending to grow	15%	\$13,400
Not intending to grow	20%	\$37,900
Attitude		
With positive views	18%	\$17,200
With negative views	8%	\$13,600

For many farmers the preferred strategy in hard times is to “live on less”

Sources: Wilkinson et al 2011¹⁰⁸: (1300 Victorian farms surveyed in June 2010, including about 220 dairy farms):
Figure 24 Downturn segmentation by industry



¹⁰⁸ Wilkinson R, Barr N, Hollier C (2011). Segmenting Victoria's farmers, Farm Services Victoria Division, Department of Primary Industries Victoria, Rutherglen, December

Business confidence

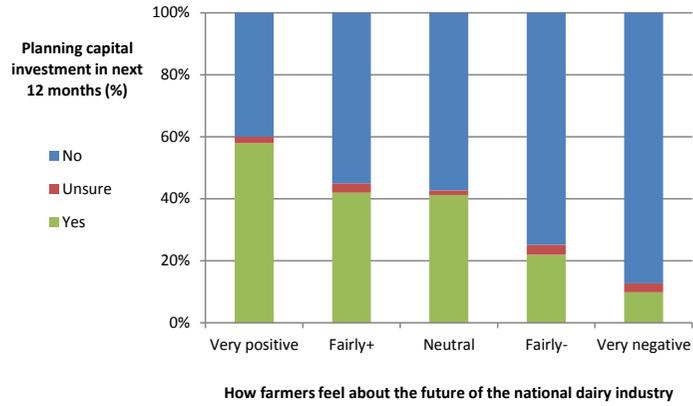
Business confidence represents the bundle of expectations around opportunities for farm profitability and growth. For the industry to prosper, product manufacturers and dairy farmers need to have a positive outlook as individuals and at a regional and national level.

- The dairy industry launched a marketing and communications program “Legendairy” in August 2013 to increase consumer confidence in the industry and its products, and farmer confidence in the industry’s future.
- Farmers who are positive about the industry’s future are more likely to invest in it (NDFS 2012). Furthermore the larger the herd, the more positive farmers tend to be about the future (begging the question which comes first).
- The level of farmer confidence in the industry’s future changes from year-to-year and from region-to-region (NDFS 2004-2012).
- The level of confidence felt by farmers is strongly influenced by milk prices, production costs, the Australian dollar and Government policies and interventions (Dairy S&O 2013).
- In 2013, confidence in the industry declined in all regions and across all age groups, business phases and herd sizes (Dairy S&O 2013).
- For the first time since the inception of the NDFS in 2004, the majority of farmers nationally *weren't* confident about the future of the dairy industry (Dairy S&O 2013). Only 43% of farmers did feel positive in 2013, down from 66% in 2012.
- In 2012, 91% of Tasmania’s dairy farmers had felt positive about the future following announcements of the investment to be made in product processing (NDFS 2012). This had fallen to 50% by 2013 – although the state remains the most optimistic of all the dairy regions (Dairy S&O 2103).
- Confidence was lowest in SA, with just 12% of surveyed farmers feeling positive (Dairy S&O 2013).
- In some dairying regions potential growth in the industry is not occurring. Reasons for this have been explored in the Alpine Valleys of Victoria. Barriers to growth in this district were: new land owners may not have the will or skills to take on dairying; dairying is not widely regarded as a successful way of growing assets; lifestyle issues, especially the labour required in dairying compared to beef; and the risk profile of dairying (variability of milk prices, input prices and seasonal conditions etc) (Mulvaney 2010).

Dairy farm businesses in Australia

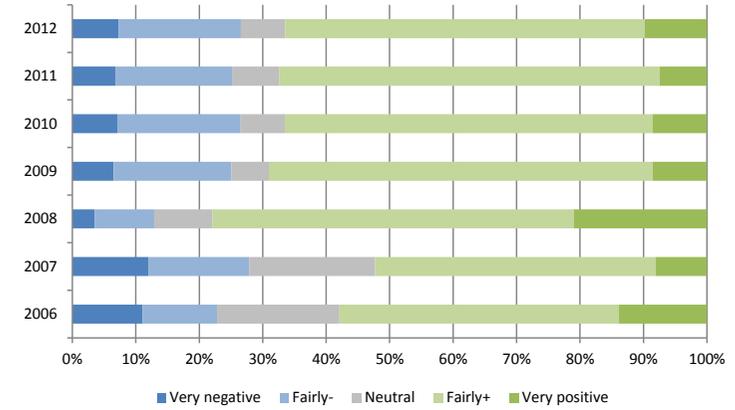
Farmers who are positive about the future are more likely to invest in it

Source: NDFS 2012 (972 farmers that had an opinion on future of industry)



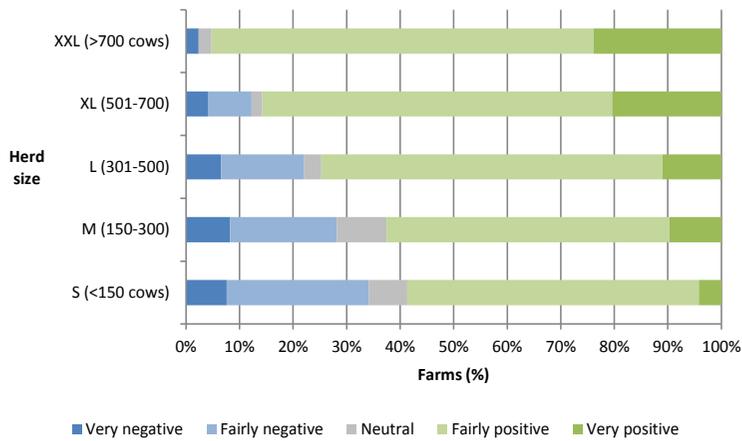
Farmer confidence in the industry's future changes from year-to-year

Source: NDFS 2006-2012 (~1000 farms each year)



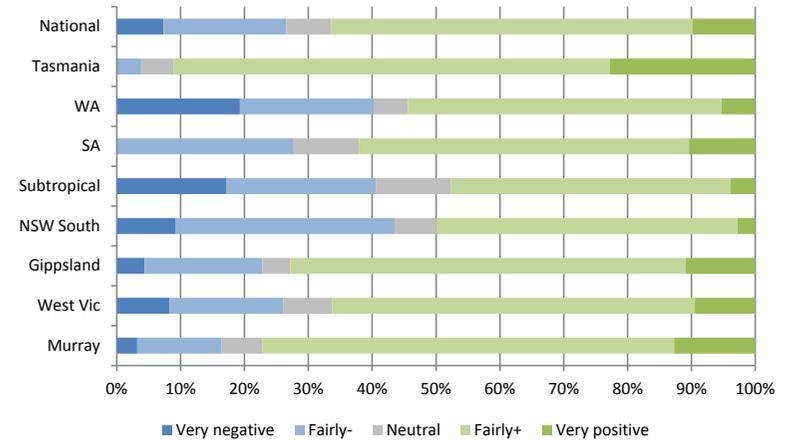
Farmers of larger herds are more positive about the industry's future

Source: NDFS 2012 (1002 farms)



Tasmania was the most optimistic of the dairy regions in 2012

Source: NDFS 2012 (1002 farms)



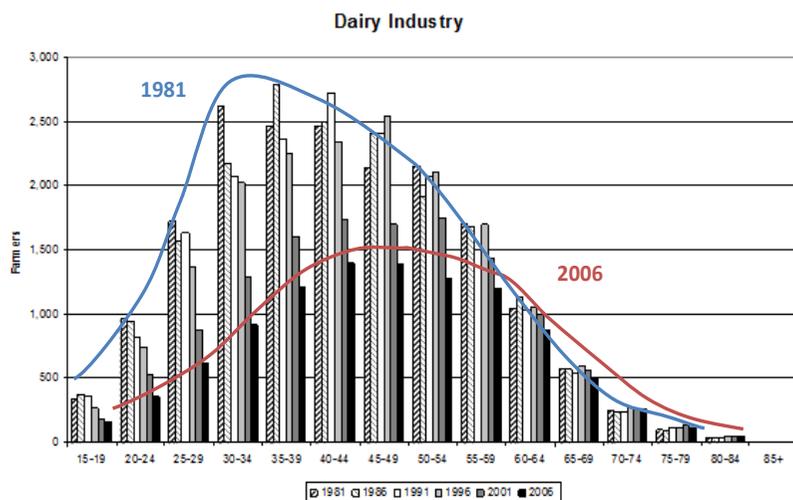
Planning for the future

For the dairy industry to sustain and grow, farm businesses and the farming way of life must be attractive to the next generation (Dairy Industry People Development Council 2011¹⁰⁹). The big question is “Who will the next generation of dairy farmers be?”

- The population of owner-managers is continuing to age, with 46.9% being 50 years or older in 2006 and 51.5% above this age in 2011 (ABS 2006 & 2011). The implications of an ageing population of farm owners are uncertain. As changes in farm ownership happen at a single point in time it would be helpful to know how many of these farm businesses have new management and ownership coming through the ranks.

The age distribution of dairy farmers changed from 1981 to 2006

Source: DPI, Neil Barr¹¹⁰ (ABS census 1981 to 2006)



¹⁰⁹ Dairy Industry People Development Council (2011). Response to the Victorian Government Parliamentary Inquiry into the capacity of the farming sector to attract and retain young farmers and respond to an ageing workforce, Prepared on behalf of Dairy Australia and the Australian Dairy Industry Council to the Victorian Parliament Rural and Regional Committee, Melbourne, August

¹¹⁰ Neil Barr is the Senior Social Researcher at the Victorian Department of Primary Industries. This information is from a time-series analysis of ABS census data from 1976-2006. An updated analysis of ‘Structural ageing in the farm sector’ is pre-publication as at October 2013.

Dairy farm business transitions

Buying and selling dairy farms is an ongoing part of the industry. The fundamentals in dairy, as in any enterprise, are: getting in, staying in profitably, and getting out. The challenges for industry are to find suitable solutions for dairy farmers planning to leave the industry, and new participants (operators, owners or investors) planning to enter.

Entry into dairy farming

The attractiveness of dairy farming to the next generation as a place to work and/or invest will be heavily influenced by the financial viability of farms. Dairy farms need to provide people with an acceptable standard of living and create wealth at a level that keeps up with other forms of investment. Competing with other opportunities in society also involves working conditions that match other jobs on offer, and community services and amenities for all members of the farming family.

- There are many examples of competing uses for agricultural land in Australia (Senate Select Committee 2010¹¹¹). Often the amenity value of land has risen faster than its productive value, reducing affordability in relation to its agricultural earning capacity.
- The low recruitment of younger persons to agriculture (in general) may be a reflection of major adjustment decisions being delayed to the inter-generational transfer period (Barr 2000¹¹²).
- A study of farmer segments suggests young people tend to choose to enter farming only if the farm has sufficient scale to earn them a high income (Wilkinson *et al* 2011¹¹³).
- While the number of people entering dairy has continued to decline over the last three decades, it seems the proportion of ‘young’ entrants to the dairy industry (under 35 years of age) has hardly changed between 1976 and 2011 (Barr 2013, unpublished¹¹⁴).
- Young businesses are generally less efficient and riskier than established businesses. They are at an “earlier point on the road from disorderly innovation to disciplined optimization” and some are likely to fail.

¹¹¹ Commonwealth of Australia (2010). Food production in Australia Final report, The Senate Select Committee on Agricultural and Related Industries, Canberra, August

¹¹² Neil Barr (2000). Structural Change in Australian Agriculture: Implications for Natural Resource Management, Department of Natural Resources and Environment, State of Victoria

¹¹³ Wilkinson R, Barr N, Hollier C (2011). Segmenting Victoria’s farmers, Farm Services Victoria Division, Department of Primary Industries Victoria, Rutherglen, December

¹¹⁴ Publication by Neil Barr pending on a paper about ‘Structural ageing in the farm sector’

Industry exits

How farm assets and management roles transition from one business operator/owner to another affects the industry as a whole. A lot of intellectual capital is lost when farm teams disperse and it may take months to find and deploy the people that have been displaced.

And some farms do not continue in dairying when the property changes hands. If exits result in a significant contraction of the industry, consumers and export markets will be underserved and society's resources (such as arable land and infrastructure) may be permanently relinquished.

- There is no information on how farmers prepare for and support management transitions. The theory is that farm owners are probably preparing for a changeover over a period of years and it then manifests as a single event.
- A study of farmer segments found that plans to sell out or scale down tended to be determined by age or family circumstances, independent of property size and scale (Wilkinson *et al* 2011¹¹⁵). Furthermore, it seems older people on small farms are more willing to remain in farming despite low incomes.
- Exits from the dairy industry have peaked in 1981, 1991, 2006 and 2011, corresponding to challenging times for the industry (Barr 2013, unpublished). Anecdotal evidence suggests that with each low swing (drought, flood, global financial crisis) people leave, not to return. The uncertainty of rewards mean that dairy does not stack against the other opportunities on offer.

What's impeding new investment in the Australian dairy industry

Source: Horizon 2020

A lack of successful investment models

Uncertainty of how investors can identify candidate farms

Insufficient development of pathways to link successful farm management family units with investment structures

A perceived lack of a sufficient pool of management skills

A lack of transparency in the performance of farms and the value chain

The low incidence of showcased success in milk production

¹¹⁵ Wilkinson R, Barr N, Hollier C (2011). *Segmenting Victoria's farmers*, Farm Services Victoria Division, Department of Primary Industries Victoria, Rutherglen, December

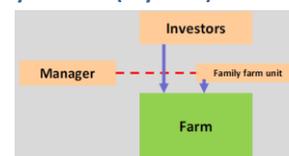
Farm investment models

- In 2013 the Horizon 2020 working group identified several impediments to new investment in the Australian dairy industry including lack of successful investment models and uncertainty of how investors can identify candidate farms (Horizon 2020¹¹⁶).
- The 'AgInvest syndicates', 'Corporate landlord' and 'Corporate farmer' models vary in the risks taken by the primary capital investor and the approach to management (Horizon 2020). However the importance of management skills and systems, with a family farm unit running the day-to-day operation, was a recurring theme between the different investment models.

Investment models presented in Horizon 2020

Source: Horizon 2020: Page 48 Farm Investment Models

AgInvest syndicates (MyFarm)



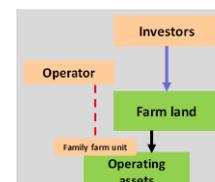
Key features

- Investors inject capital in purchase and improvement
- Family unit manage on farm, some with equity incentive
- Manager provides input to investor on optimisation strategy and close monitoring of performance.

Application

- This model is used in more than 50 farms in NZ, 4 in Australia
- Provides a suitable vehicle for city and farm investors to meet
- Copes with syndicate turnover and investor exit
- Draws on a large pool of investor interest due to earning reputation of NZ dairy and manager's track record

Corporate landlord



Key features

- Investors inject capital in land assets
- Operator takes dairy operating risk
- Family unit manage on farm, with equity incentive
- Operator provides input to investor on optimisation strategy and close monitoring of performance.

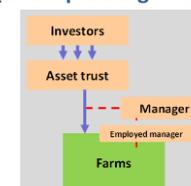
Application

- This model is proposed to attract agricultural investors
- Provides an entry for large scale investors

Corporate farmer (with operating risk)

Key to lines

- ownership
- - - management
- lease



Key features

- Investors inject capital in purchase and improvement
- Manager on farm, with salary/bonus equity incentive
- Manager closely manages farm, makes operational decisions and monitors performance
- Manager incentivised on performance

Application

- This model is currently used in a group of 10 farms

¹¹⁶ Horizon 2020 (2013). *Final Report to the Dairy Australia Project Board from the Working Group, Dairy Australia*, January

Dairy farm businesses in Australia

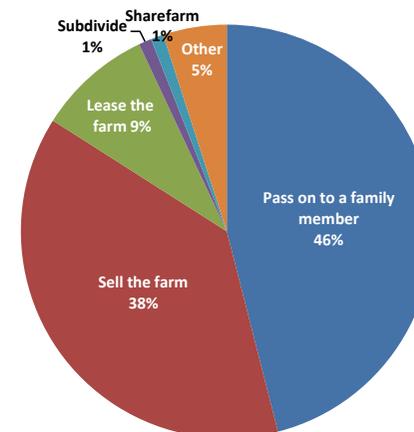
Succession planning

The population of Australian farmers is getting older. On the surface this suggests the industry is not attracting younger new entrants and raises concerns about its sustainability and contribution to regional economic health in the years to come as baby boomers retire. But it's possible that these concerns are misdirected. There may not be an issue at all if dairy farms have succession plans in place that are preparing for the next generation to take on the business of dairying.

- The needs of landholders and potential investors must both be met for dairy farms to remain in the industry. This involves consideration of the opportunities for younger generations as well as farm profitability, productivity capability and options for managing risk (Mulvany 2010).
- Half (49.9%) of the farmers in the attitudinal survey for farm business segmentation had a high inter-generational orientation: the 'Growing for the kids', 'Love farming' and 'Family first' segments (Waters *et al* 2009).
- When farmers were asked "what is likely to happen to the farm" in 2006, 46% were planning to pass it on to family and 38% were intending to sell it (NDFS 2006).
- In 2007 41% of farmers had a plan in place for future ownership of the farm (NDFS 2007). However 38% of farmers over 60 years did not have a plan in place for future farm ownership.
- Other family members on most farms (85%) that had plans in place for future farm ownership were aware of the retirement plans (NDFS 2007).
- The most popular information sources when discussing plans were the immediate family and accountants or financial advisers. Solicitors, farm consultants and other dairy farmers were also occasionally asked for their opinion (NDFS 2007).
- Many of the next generation of farm owners are likely to come from dairy farming families given that dairy farms are still largely family-owned. In 2005 66% of family members who worked on dairy farms were under the age of 50 and many (47%) were between 30 and 49 years of age (NDFS 2005).

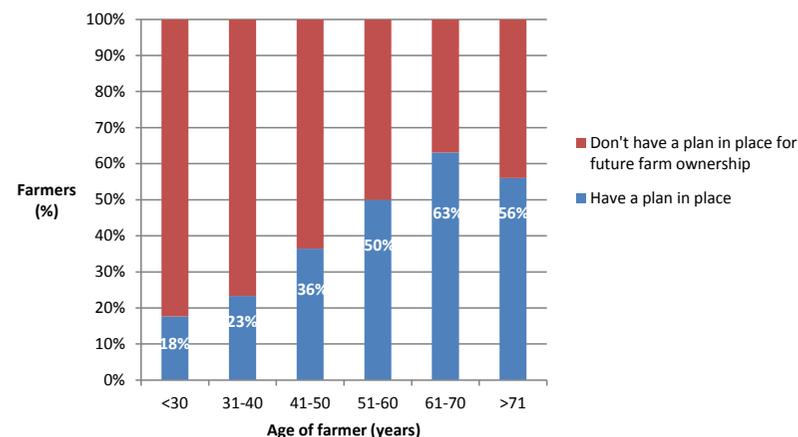
In 2006 46% of farmers were intending to pass the farm onto family

Source: NDFS 2006 (1167 farms)



In 2007, 38% of farmers over 60 years didn't have a plan for future farm ownership

Source: NDFS 2007 (984 farms with age data that responded to question)



Dairy farm businesses in Australia

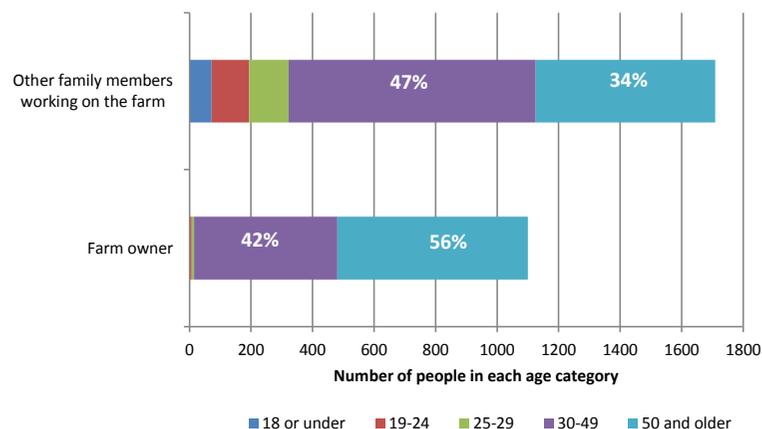
41% of farmers had plans for future farm ownership in 2007

Source: NDFS 2007 (1004 farms)

Farms that have a plan in place for future ownership of the farm	41% of farms
Farms where other family members are aware of the plans	85% of the farms that have plans
Farmers who are confident they can access advice or information when planning for future farm ownership	77% farms that don't have plans
Main source of information for planning for future farm ownership	
Self (past knowledge)	42%
Accountant	32%
IR person (including solicitor)	10%
Other dairy farmers	7%
Farm advisers (including rural counsellors)	4%
Other	5%

66% of family members who worked on dairy farms in 2005 were under 50

Source: NDFS 2005 (1276 farms with 2808 family members)



Points of interest

- Dairy farm businesses have changed considerably over the last decade; with fewer farms, increased herd size, increased capitalisation, different feeding and calving systems, increased staff numbers, altered ownership and management structures and shifts in the use of technology. The implications of these changes on the work organisation, skills and risk management approaches for farming are less well understood.
- The increasing proportion of farms employing people other than family, provides some insight into the scale of change in work organisation that has occurred.
- The research on farmers' attitudes and beliefs has shown "dairy farmers are not just productivity and profit robots" – what they do is influenced by a range of social, cultural and environmental values as well as economic motives.
- The different motivations for farming shape how farming is done. This creates a large variation in the drive to increase productivity and expand in scale, the relative interest in new technologies, the level of aversion to risk, and use of services and advice.
- The range and fluctuation in the profitability of dairy farm businesses (repeatability from year-to-year within farms AND variability between farms in similar economic conditions) represents an issue for the longer term sustainability of the sector.
- To improve the wealth of the dairy farm sector, both the industry and farmers need to move from the short-term preoccupation of managing risk to strategies that are able to sustain through commodity cycles and focus on increasing the 'fitness' of farm businesses.
- Having a range of practical arrangements for investing in the industry will help keep the resources of (small, medium and large scale) dairy farms in the dairy industry.
- There is increased formality in farm staff management amongst larger herds.

Information gaps

- Ways to validly and objectively assess the extent that farm teams contribute to business success (“people productivity”).
- The potential of dairy-specific data from ABS around injuries and deaths in the industry (describe Catalogue & process)
- How farm businesses ride out the poor years, and how long they can survive using these approaches.
- What proportion of farm businesses in the industry are of sufficient scale to compete with financial returns from other investments.
- A better understanding of the dynamics of ownership - the rate and reasons for entry and exit, tenure of ownership, and options for succession - would enable the industry to identify the type of support needed to plan for the future. And this may well be different for the 34% of dairy farms that have no paid employees.
- Ways to track and understand trends in dairy-farm ownership (including international interests).

Where dairying sits in the labour market

Employment prospects in other industries and the economic outlook of -
regions influence the attractiveness of dairying

Regional workforce planning and action

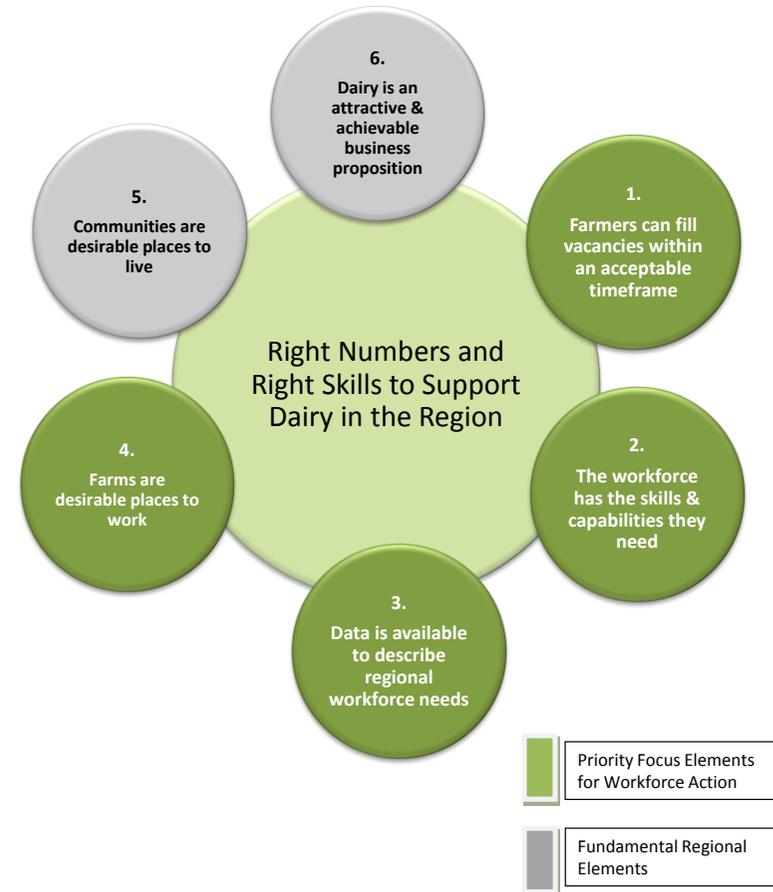
The industry needs to be on a fast learning curve to successfully compete with other businesses in the regional labour market. An understanding of the regional labour market conditions, the region's connection with dairying and external contextual factors provides a strong start for regional workforce planning and action.

The supply and demand for people to work on farms and in manufacturing in dairying regions is continually changing. Dairy industries in each region need to have ways of understanding their workforce supply and demand, and processes that enable them to respond effectively to their needs.

- In 2004 a report described the causes of many of the workforce issues in the dairy industry as systemic and internal to the industry (acirrt 2004¹¹⁷). “The industry is seen as an employer of last resort by many job seekers as well as by employment and training agencies. There is a high rate of exit – not just of farmers but also of sharefarmers, trainees and employees.” This has driven investment in Dairy Australia’s The People in Dairy program and Workforce Planning and Action initiatives.
- How to effectively operationalize workforce planning and action in the dairy regions is still at an early stage. In 2006 the industry had its first go at developing a more systematic approach to mapping supply against demand and describing regional issues and capacity. This process is summarised in the Dairy workforce planning and action wheel (Nettle and Oliver 2009¹¹⁸).
- A systematic approach to exploring workforce issues can overturn widely accepted beliefs. An example of this is the situation analysis of the milking machine technician workforce in Australia where the main problem was thought to be around attraction and retention (Windsor and Brightling 2012¹¹⁹). However evidence collected from OEMs¹²⁰, dealerships and technicians found reduced viability of the businesses in which the techs were working was a core issue (see page 91 for more information).

A framework to help identify the People priorities in the regions

Source: Dairy Australia’s Industry People and Capability Group



¹¹⁷ acirrt (2004). *Dairy Employment for the future, The strategy, Prepared for the United Dairyfarmers of Victoria, WestVic Dairy and the Geoffery Gardiner Dairy Foundation by the University of Sydney’s Australian Centre for Industrial Relations Research and Training, July*

¹¹⁸ Nettle R, Oliver D (2009). *Workforce planning and action for the Australian dairy industry, Report 12888 to the Geoffery Gardiner Dairy Foundation prepared by Rural Innovation Research Group and the Workplace Research Centre, February*

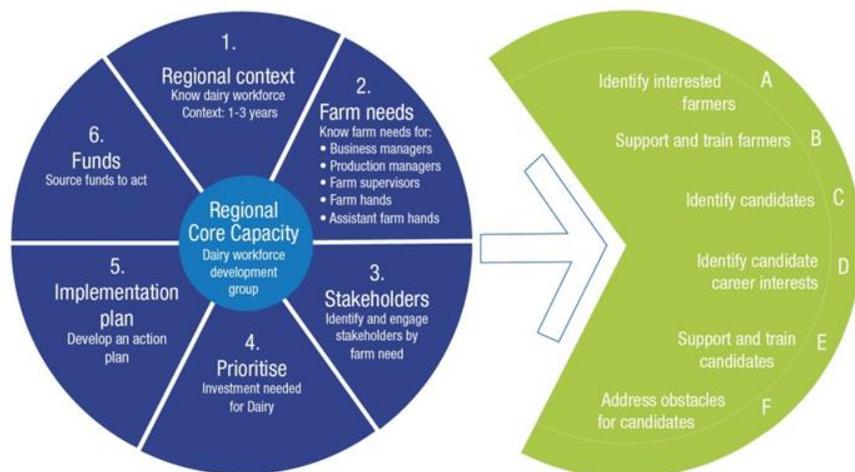
¹¹⁹ Windsor K, Brightling P (2012). *Workforce planning and action, Service providers – Milking machine technicians, Final report to Dairy Australia for Phase 1 Situation Analysis, December*

¹²⁰ OEM refers to Original Equipment Manufacturers

Where dairying sits in the labour market

A model for operationalizing Dairy Workforce Planning and Action

Source: Nettle and Oliver 2009



National Capacity

Australian dairy workforce planning and action

The steps involved in dairy workforce development

Source: Ideas from the Dairy Moving Forward People Strategy 2010¹²¹

Who	What
Individual people	Develop the necessary skill sets
Individual farms	Offer work that is satisfying and rewarding
Regional community	Explore ways to match demand and supply
Whole of industry	Be able to operationalise regional workforce planning
	Promote a culture change in how farmers and industry value people in their contribution to farm and business performance
	Build community regard and support for people interested in careers in dairy
	Be able to measure factors that influence workforce planning and action from a strategic point of view

¹²¹ Dairy Moving Forward Committee (2010). Dairy Moving Forward - Research, development and extension priorities for the Australian dairy industry, Melbourne, December

Regional labour markets

The level of unemployment in the region, the number of other industries that need people, the demographic, wealth, availability of training and services all influence mood and the positioning of dairying in the regional labour market. This section draws on the ABS 2011 census to describe the labour market in the dairy regions (the Statistical Local Areas for the regions are summarised on page 4 and listed in the appendix).

- The total population in the dairy regions has increased by 10% between 2006 & 2011 (ABS dairy 2006 & 2011). Growth has been strongest in Subtropical Dairy, which was already the most populous of the dairy regions.
- Populations in the Murray, Tasmania and Western Victoria dairy regions remain largely unchanged (ABS dairy 2006 & 2011).
- Age distributions in each of the dairy regions are similar to that of regional Australia more broadly (ABS dairy 2011).
- Although the ratio of males to females remains the same in the dairy regions, more of the population is 50 years or over and 31% have post-school qualifications - up from 26.4% in 2006 (ABS dairy 2006 & 2011).
- Certificate III is the most common type of qualification in the dairy regions, held by 13% of people (ABS dairy 2011). 2% of the population have a Certificate IV and 9% have a Bachelor degree or higher.
- 18.4% of young people (15-24 year olds) in the dairy regions are currently attending TAFE or university in a full-time or part-time capacity (ABS dairy 2011). This is a marked increase from 3.9% reported at the 2006 census (ABS dairy 2006). Attendance is highest in Southern NSW and Gippsland.

Demographics relating specifically to the dairy workforce are described from page 67 onward and can be used for direct comparisons with this ABS census information on the regional labour markets.

Where dairying sits in the labour market

Population changes in Australia's dairy regions between 2006 & 2011

Sources: ABS dairy 2006 & 2011 (all Australians)

	Dairy regions 2011	Change since 2006 ^a	Regional Australia ^b 2011	Change since 2006 ^a
Population	3,320,614	↑10.0%	6,501,196	↑ 3.7%
Male	49.6%	Same	50.0%	↑ 1 point
Female	50.4%	Same	50.0%	↓ 1 point
Age				
18 and younger	26.2%	↓13 points	25.6%	↓13 points
19 to 24 years	6.6%	↑ 1 point	6.7%	↑ 1 point
25 to 29 years	5.3%	↑ 4 points	5.6%	↑ 5 points
30 to 49 years	26.0%	↓20 points	25.9%	↓19 points
50 years and older	35.9%	↑28 points	36.2%	↑27 points
Education level				
Cert I or II	1.2%	↑ 2 points	1.2%	↑ 1 point
Cert III	12.9%	↑12 points	12.7%	↑16 points
Cert IV	2.1%	↑ 7 points	2.0%	↑ 6 points
Diploma	5.8%	↑ 9 points	5.3%	↑ 7 points
Bachelor or higher	9.0%	↑16 points	9.2%	↑43 points
Youth currently attending^c				
TAFE	8.8%	↑70 points	7.6%	↑63 points
University	9.6%	↑75 points	8.6%	↑72 points

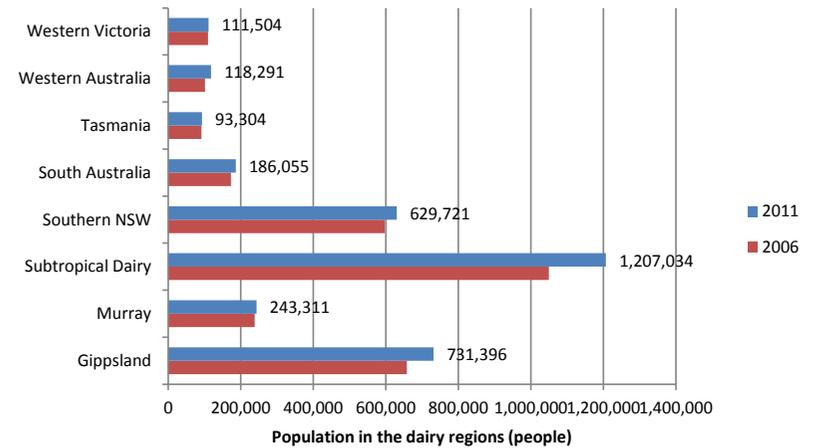
(a) Each point equals 0.1%

(b) This refers to all non-metro areas of Australia

(c) Youth refers to 15-24 year olds

Subtropical Dairy is the most populous dairy region & Tasmania is the least

Source: ABS census 2006 (all Australians)



Age distributions in the dairy regions are similar to regional Australia

Source: ABS dairy 2011 (all Australians in non-metro areas)



Where dairying sits in the labour market

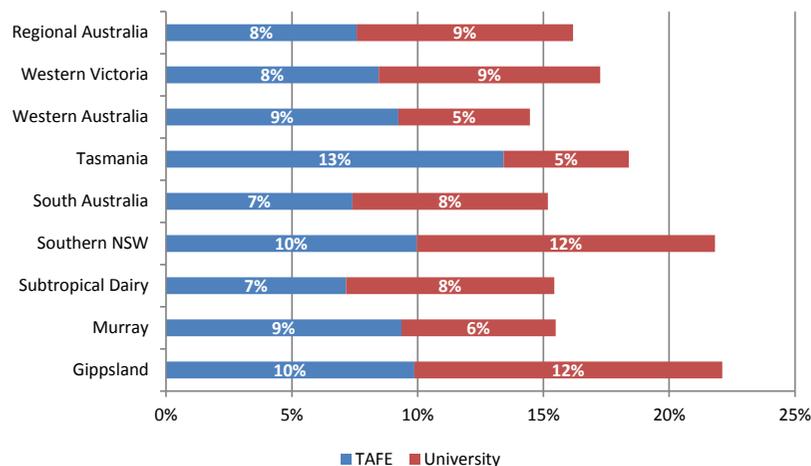
People in Tasmania's dairy region have the lowest level of educational attainment

Source: ABS dairy 2011 (all Australians)



Youth attendance at TAFE/uni is higher in Gippsland & Southern NSW

Source: ABS dairy 2011 (all aged 15-24 years)



Level of workforce participation

- Labour market conditions in the dairy regions have improved slightly although they vary considerably between regions. Participation rates¹²² have increased from 47.2% in 2006 to 48.0% in 2011 and there has been a decrease in unemployment in most regions (ABS dairy 2006 & 2011).
- The increase in participation rate is attributed to more women in the labour market in all dairy regions except the Murray (ABS dairy 2011).
- Participation rates for both men and women are slightly higher in the Gippsland, Western Victoria, SA and WA dairy regions than in regional Australia (ABS dairy 2011). However in WA & SA this is countered by a rise in overall unemployment.
- Unemployment rates are lowest in Western Victoria, WA and the Murray region (ABS dairy 2011).
- Prospects for jobseekers are relatively weak in Tasmania, Subtropical Dairy and Southern NSW given the higher unemployment (ABS dairy 2011).
- Young job seekers are the least likely to find employment. The youth unemployment rate in the dairy regions is 12.2% on average, and is highest in Tasmania, Subtropical Dairy and SA. (ABS dairy 2011).

¹²² Participation rate measures engagement of the population in the labour market. It includes people employed or seeking work, expressed as a ratio of the total working population (aged 15 to 65). Groups not included are students, retired people, stay-at-home parents, people who cannot find work and become discouraged, and people in prisons or similar institutions.

Where dairying sits in the labour market

Changes in workforce participation in Australia's dairying regions

Sources: ABS dairy 2006 & 2011 (all people participating in the census)

	Dairy regions	Change since 2006 ^a	Regional Australia ^b	Change since 2006 ^a
Population	3,320,614	↑10.0%	6,501,196	↑ 3.7%
Labour force participation rate^c	48.0%	↑ 8 points	46.8%	↑ 7 points
Males	50.9%	Same	50.4%	↑11 points
Females	43.0%	↑13 points	43.2%	↑41 points
Unemployment rate^d	5.8%	Same	5.6%	↓18 points
Males	5.7%	↑ 1 point	5.7%	↓14 points
Females	5.8%	↓ 3 points	5.6%	↓22 points
Youth^e	12.2%	↑11 points	11.7%	↑10 points

(a) Each point equals 0.1%

(b) This refers to all non-metro areas of Australia

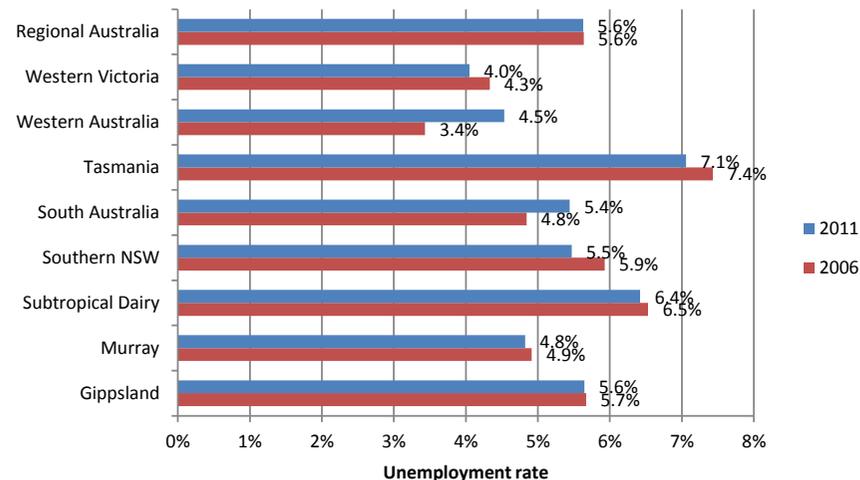
(c) Percentage of the adult population that is part of the labour force

(d) Percentage of labour force that is unemployed, ready to work and seeking a job

(e) Unemployment in persons 15 to 24 years of age

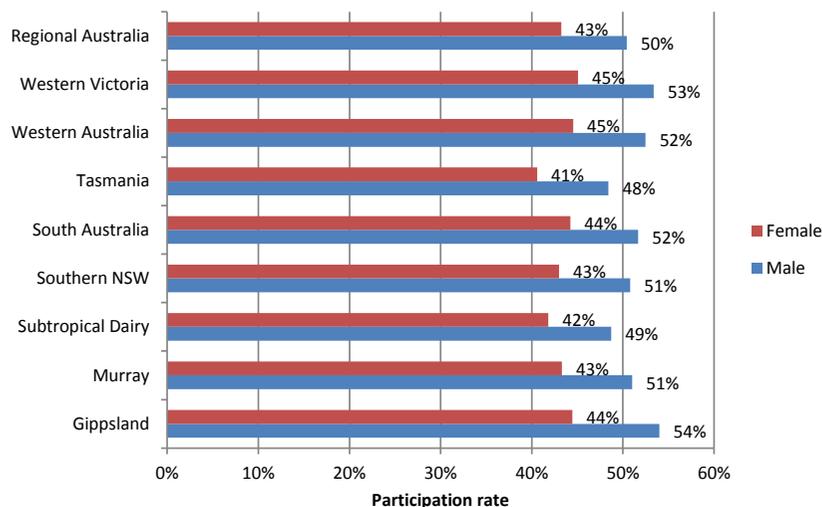
There has been a rise in unemployment in the WA & SA dairy regions

Source: ABS census 2011 (all in census)



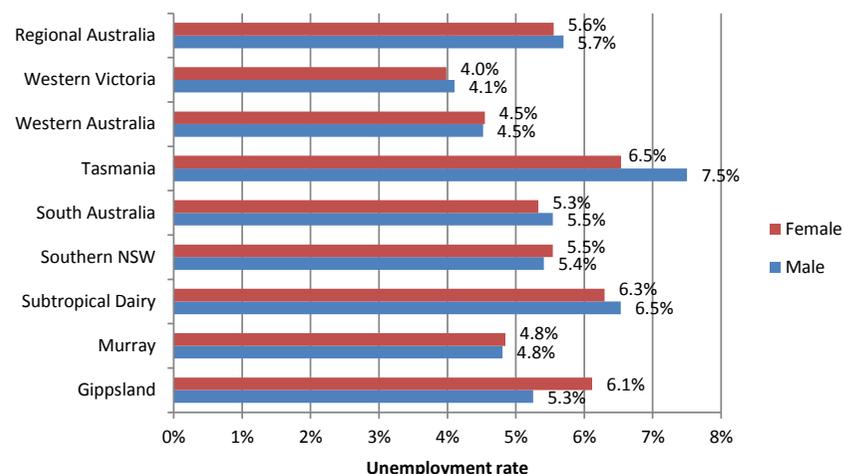
Participation rates are highest in Gippsland & Western Victoria

Source: ABS census 2011 (all in census)



Unemployment rates are lowest in Western Victoria, WA & the Murray

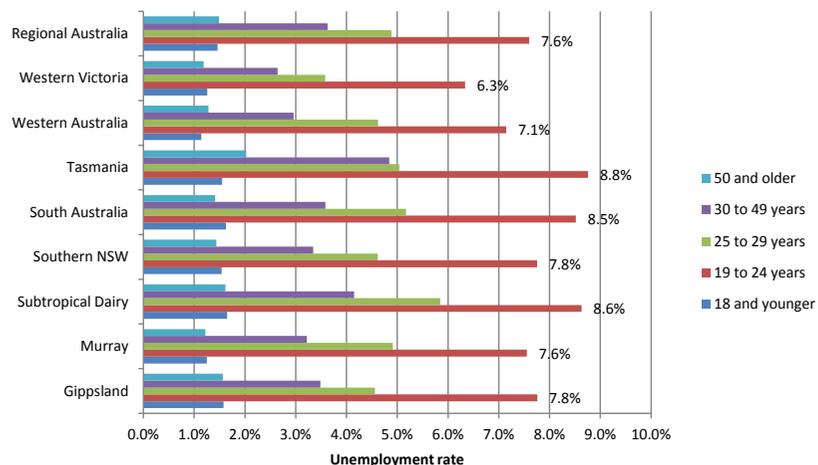
Source: ABS census 2011 (all in census)



Where dairying sits in the labour market

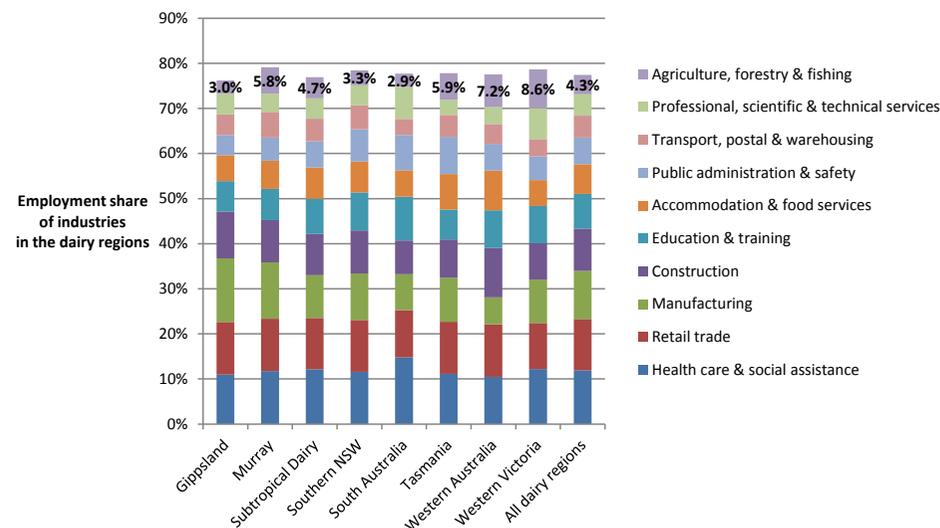
Youth unemployment is highest in Tasmania, Subtropical Dairy & SA

Source: ABS census 2011 (all in census)



A few sectors dominate employment in the dairy regions

Source: ABS dairy 2011 (all people participating in the census who are working)

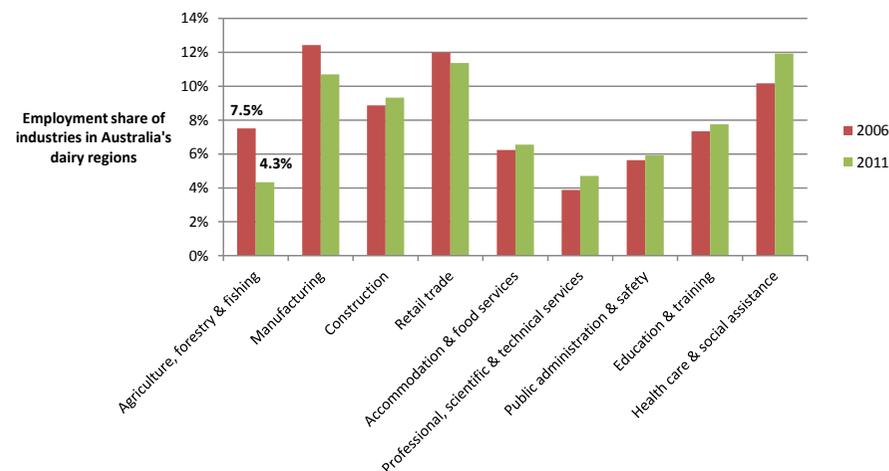


Main industries of employment

- Agricultural commodities (wool, beef, wheat, dairy products, seafood, wood and paper products) contribute significantly to Australia's economy and are an important source of employment in regional Australia despite the size of the sector (DEEWR 2012¹²³).
- Employment in Australia's dairy regions is dominated by the 'Health care & social assistance', 'Retail trade', 'Manufacturing' & 'Construction' sectors, which together account for 43% of employment (ABS dairy 2011).
- 'Agriculture, Forestry & Fisheries' across the 8 dairy regions accounted for 4.3% of employment in 2011, a marked drop from 7.5% in 2006 (ABS dairy 2006 & 2011).
- The employment share of dairy farming across the 8 dairy regions in 2011 ranged from 0.3% to 5.2% (ABS dairy 2011). It was lowest in Southern NSW and Subtropical Dairy, and highest in Western Victoria.
- Dairy farming's share of total employment in the dairy regions had decreased between 2006 and 2011 in most regions (ABS 2006 & 2011).

The employment share of Agriculture, Forestry & Fisheries has dropped

Source: ABS dairy 2006 & 2011 (all people participating in the census who are working)

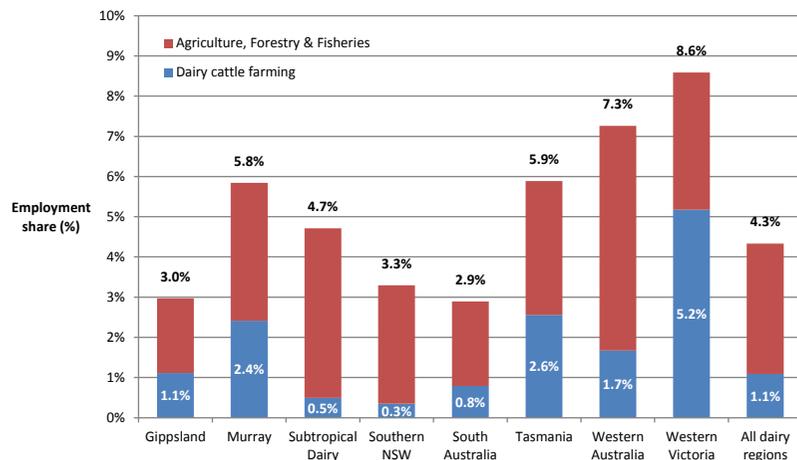


¹²³ DEEWR (2012). Agriculture, Forestry and Fishing Employment Outlook, Australian Government

Where dairying sits in the labour market

5.2% of the workforce in Western Victoria was on dairy farms in 2011

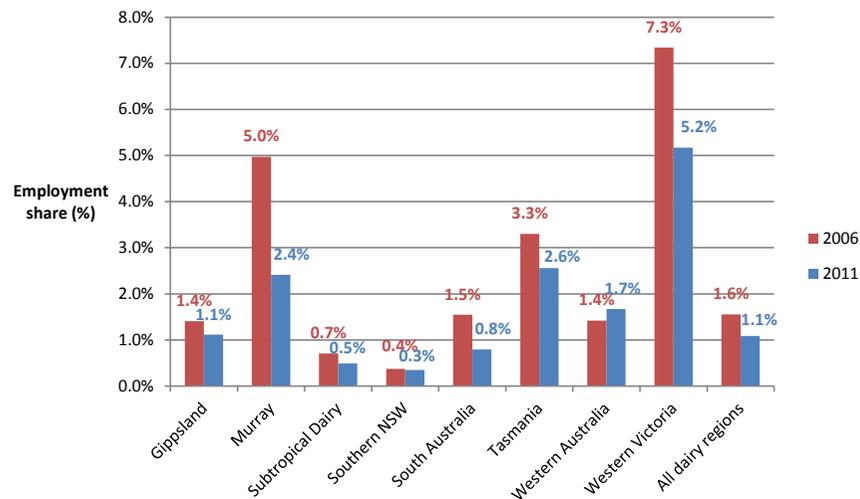
Sources: ABS dairy 2011



Changes in employment share in the regions between 2006 & 2011 are on page 13.

Dairy farming's share of employment has decreased in most regions

Sources: ABS dairy 2011



Income and hours worked for all types of employment

- In the dairy regions and regional Australia more generally there has been a shift in the workforce to more women working (now 46% of the workforce) and more men working part-time (ABS dairy 2006 & 2011).
- The increase in part-time work is seen in a shift in the distribution of hours worked each week, with a decrease in the proportion of people working a 35-49 hour week (ABS dairy 2006 & 2011).
- Incomes in the dairy regions have increased since 2006 with 35.2% of workers in 2011 earning \$1,000 per week or more (ABS dairy 2006 & 2011).
- As in 2006, the proportion of low income earners (those receiving less than \$400 per week) is still slightly higher than in regional Australia (ABS dairy 2006 & 2011).
- More people in Gippsland & Southern NSW have a low weekly income (ABS dairy 2011).
- In 2011 the median weekly earnings for people employed in the Agriculture, Forestry and Fishing industry was \$878 per week, which was below the average weekly earnings for all industries of \$1,100 per week (DEEWR 2012¹²⁴). The median weekly earnings for people employed in dairy cattle farming was \$880.

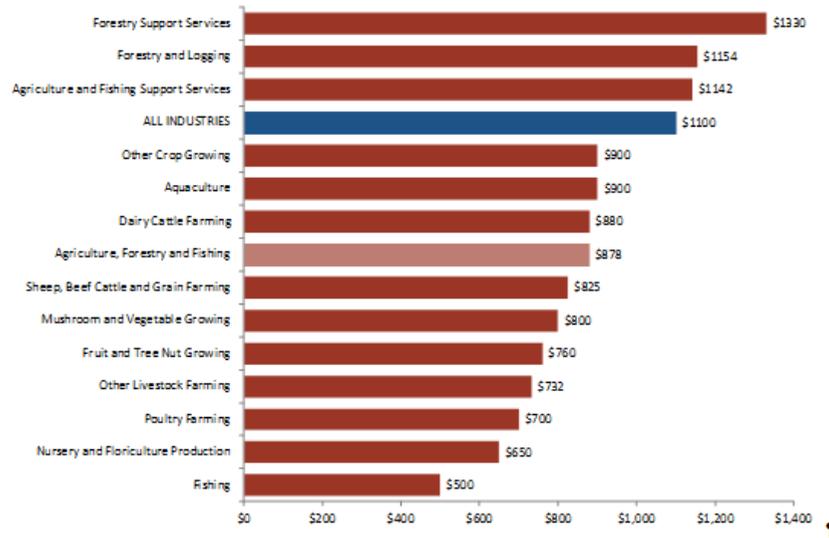
Page 71 has information on hours worked and income of the people in dairy farming.

¹²⁴ DEEWR (2012). Agriculture, Forestry and Fishing Employment Outlook, Australian Government (derived from the ABS cat. no. 6310.0 August 2011 'Employee Earnings, Benefits and Trade Union Membership', custom request data)

Where dairying sits in the labour market

The median weekly earning for dairy farming in 2012 was \$880

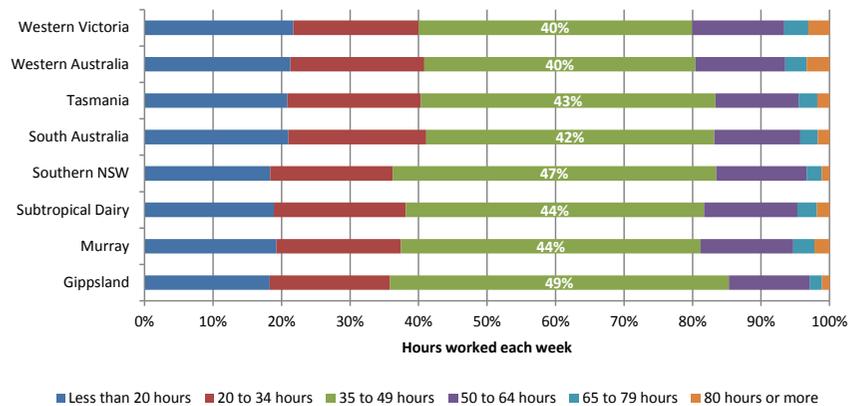
Source: DEEWR 2012



45% of the population in dairy regions work 35 to 49 hours per week

Source: ABS dairy 2011 (all 1,468,600 people working in the dairy regions)

Note ABS didn't release extended hours of work for Regional Australia for the 2011 census



In 2011 more people were working part-time than in 2006

Sources: ABS dairy 2006 & 2011 (all people participating in the census who are working)

	Dairy regions 2011	Change since 2006 ^a	Regional Australia ^b 2011	Change since 2006 ^a
Persons working	1,468,600	↑11.7%	2,873,195	↑ 5.3%
Male	53.8%	↓ 9 points	53.8%	↓ 9 points
Female	46.2%	↑ 9 points	46.1%	↑ 2 points
Employment status				
Males full-time	75.4%	↓10 points	75.8%	↓ 7 points
Males part-time	18.2%	↑13 points	17.6%	↑ 9 points
Females full-time	44.0%	↓ 4 points	45.5%	↑30 points
Females part-time	49.0%	↑ 3 points	47.4%	↓28 points
Hours per week			Not available ^c	
Less than 20 hours	19.0%	↑ 1 point		(was 19.2%)
20 to 34 hours	18.6%	↑ 8 points		(was 17.7%)
35 to 49 hours	45.2%	↓49 points		(was 48.3%)
50 to 64 hours	13.0%	↑22 points		(was 11.4%)
65 to 79 hours	2.5%	↑ 9 points		(was 2.1%)
80 hours or more	1.7%	↑ 9 points		(was 1.4%)
Weekly income				
Less than \$400	18.1%	↓60 points	17.5%	↓69 points
\$400 to \$1000	46.6%	↓58 points	45.0%	↓92 points
\$1000 and above	35.2%	↑117 points	37.5%	↑161 points

(a) Each point equals 0.1%

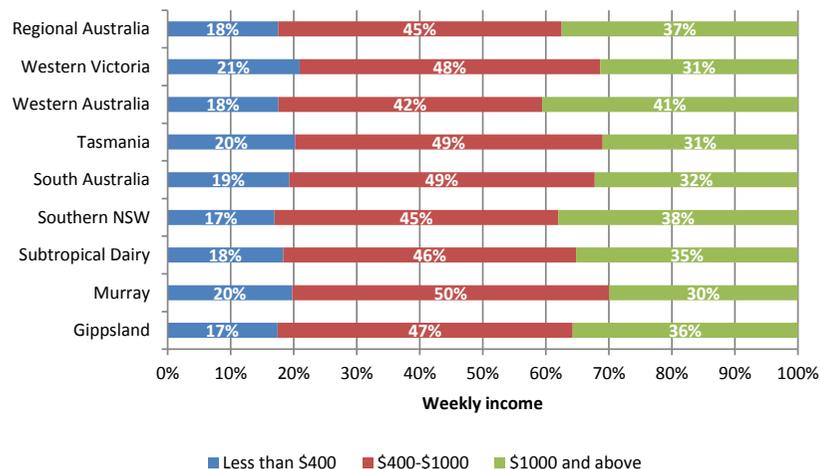
(b) This refers to all non-metro areas of Australia

(c) ABS didn't release these categories of hours worked for Regional Australia for the 2011 census

Where dairying sits in the labour market

Weekly income varies between the dairy regions

Source: ABS dairy 2011 (1,468,600 people, where the average covers both full-time and part-time work)



Dairy farm workforce dynamics

About the dairy farms that employ

The workload on Australian dairy farms has increased over the last decade with the increasing herd size and farm productivity. As a result, an industry of family-owned businesses has started employing people other than family members.

The transition from family members working long hours to employing people and using more sophisticated systems requires a cultural shift that places as much emphasis on planning for a productive farm business and vibrant workforce as is put into the day-to-day management.

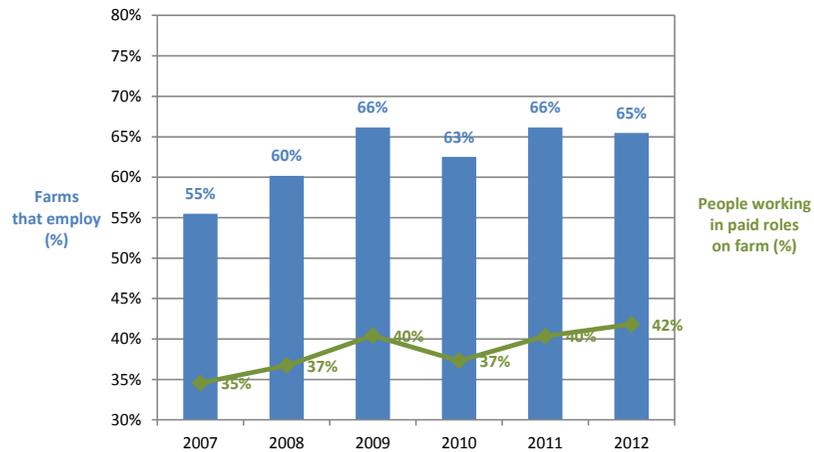
- Most dairy farms would be regarded as small businesses by the Australian Bureau of Statistics; ie actively trading businesses with 0-19 employees (DISSR 2011¹²⁵).
- There has been a gradual increase in the proportion of dairy farms that employ people and the proportion of people working in paid roles between 2007 and 2012 (NDFS 2007-2012).
- In 2012 65% of farms employed people (NDFS 2012). This is up from 55% of farms that had employees in 2007 (NDFS 2007).
- Proportionately fewer farms in Subtropical Dairy and the dairy regions in Victoria employ people in paid roles (NDFS 2012).
- Two-thirds (66%) of farms that employ staff typically have 1 or 2 people working for them (NDFS 2012). This has been consistent over the past few years (NDFS 2007-2012).
- Larger herds tend to have more people working on the farm (NDFS 2012).
- The proportion of people on farm working in paid roles has increased from 35% in 2007 to 42% in 2012 (NDFS 2007-2012).
- The population of people who work on farm is very dynamic. Staff changes are anticipated on about 1 in 5 farms every 12 months (NDFS 2009-2012).
- Usually only a few of the farms that employ anticipate putting people off (NDFS 2009-2012). The usual reasons given for people leaving the farm are that they are backpackers or casual workers planning to move on (about 1 in 3), they can't afford to keep them on (about 1 in 3), the need for someone with better skills (about 1 in 4), or because of down-sizing or insufficient work (about 1 in 7).

¹²⁵ DISSR (2011). Australian small business key statistics, Department of Innovation, Industry, Science & Research, Australian Government, Canberra

Where dairying sits in the labour market

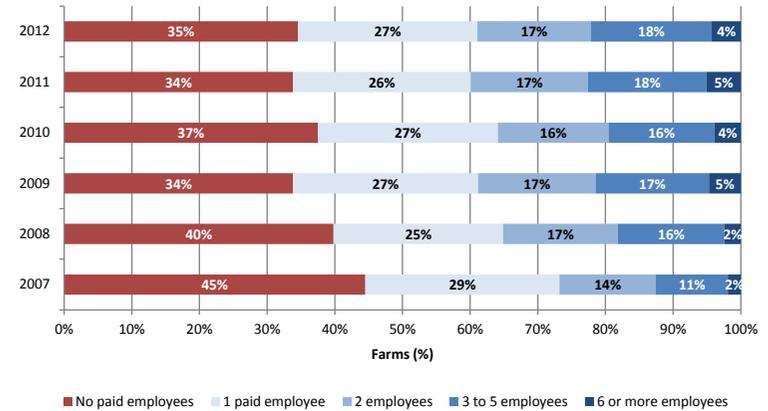
65% of farms employ people

Sources: NDFS 2007-2012 (~1000 farms each year) with ADIF 2007-2012 used to impute people in paid roles



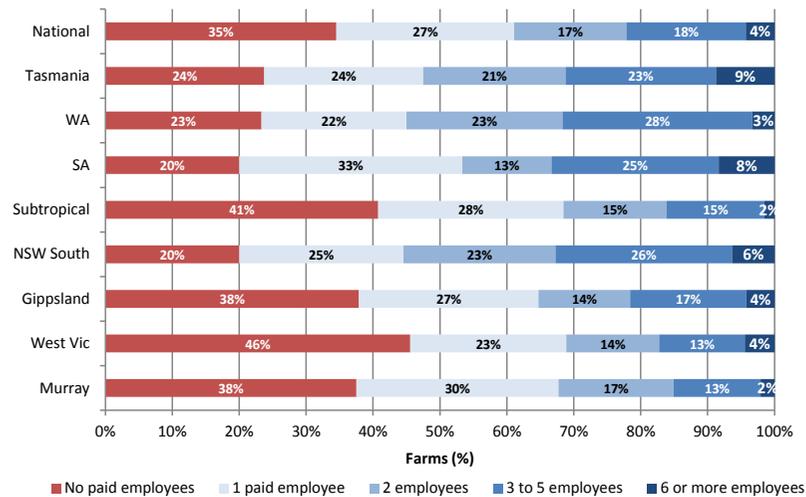
Farms that employ typically employ 1-2 people

Source: NDFS 2012 (1002 herds)



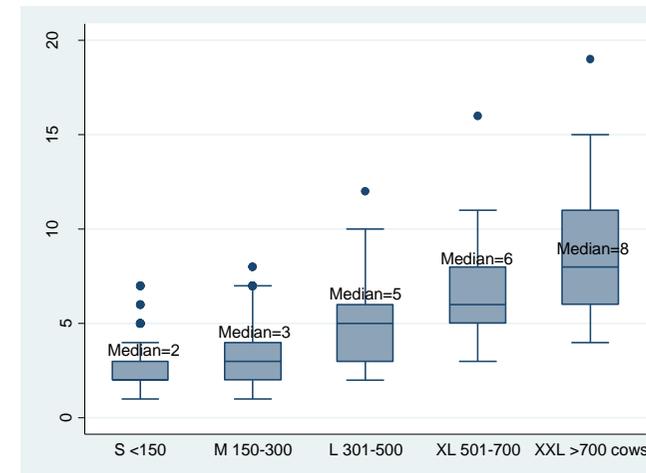
Fewer farms in the Subtropical & Victorian dairy regions employ people

Source: NDFS 2012 (1002 herds)



Larger herds tend to have more people working on the farm

Source: NDFS 2012 (1001 farms, excluding a farm with 50+ workers)



Where dairying sits in the labour market

Attracting staff

Many dairy farms have only started employing people other than family members in the last decade and are working through what needs to be done on farm to provide a safe workplace and comply with the industrial relations laws.

- Although there is no dairy-specific information, a DEEWR survey of 230 employers¹²⁶ in 2012 found 4.7% of vacancies remained unfilled in 'Agriculture, Forestry and Fisheries' in the 12 months prior September 2012 (DEEWR 2012¹²⁷). The most common reasons for recruitment in the sector were staff turnover (cited by 73% of those recruiting) and to increase staff numbers (cited by 57%). On average there were 4.8 applicants per vacancy of whom 1.7 were considered suitable by employers. The majority of employers (67%) said lack of skills was a reason for applicant unsuitability.
- The numbers of dairy farmers expecting to recruit has decreased since 2010 (NDFS 2009-2012). In 2012, 17% of farms were expecting to recruit and 3% were expecting to put people off.
- It was estimated from the National Dairy Farmer Survey that about 1,662 people would be recruited in 2012 (imputed from NDFS 2012).
- There is an ongoing demand for farmhands and assistant farmhands on dairy farms in all regions (NDFS 2012). This is consistent with the whole agricultural sector where vacancies for livestock farm workers are common (DEEWR 2012).
- In 2012, 22% of the people in paid roles on farm had started in the last 12 months and 15% were new to the dairy industry (NDFS 2012). All employees recruited to assistant farmhand positions in the last 12 months were new to the industry.
- It seems relatively straightforward to find people to work on farms. There is no recent data on time to fill vacancies on dairy farms, but in 2006 many farms (80%) that had tried to fill a position in the preceding 12 months were successful in getting someone within a month (NDFS 2006).
- The challenge is to find the right person. In the five years preceding 2008, 59% of dairy farms had tried and almost two-thirds of these (64%) said they often or always had difficulty finding the right people (NDFS 2008).
- 69% of farmers who had tried to find people in the 5 years preceding 2008 said finding the right people to work on the farm had affected the performance of the

farm business (NDFS 2008). One-third (30%) of those who had found it difficult believed it had affected the performance of their farm business "a great deal".

- 22 of the 28 farmers surveyed to better understand workforce issues in the Murray Irrigation region in 2010 had attempted to find staff (Eastwood and Nettle 2010¹²⁸). Many farmers said it had an impact on the farm business (68%) and their personal life (58%).
- Farmers reported little difficulty in finding casual staff, but finding people with experience with livestock was more difficult, as was finding experienced staff for senior positions (Eastwood and Nettle 2010).
- The farmers surveyed in the Murray Irrigation study had wanted staff for more senior positions to enable them to "step back and focus on other aspects of the business", particularly how to build it back up post-drought (Eastwood and Nettle 2010).
- The main method for sourcing experienced staff was through farmer networks (Eastwood and Nettle 2010).
- Farmers often try more than one method to fill a vacant position. The most common methods using in 2006 were to ask neighbours and dairy company field officers, and to advertise in the local paper (NDFS 2006).
- Some dairy farms now engage working holiday makers for short-term employment. The working holiday maker program is a cultural exchange program which allows visa (subclass 417) holders to supplement their holiday funds through short-term work.
- Visa 417 holders can work full-time during their 12-month stay in Australia but are limited to a maximum of six months' work with any one employer (see www.thepeopleindairy.org.au). Working holiday visa holders who perform 'specified work' (which includes dairy farming) in an eligible regional Australian area for a minimum of three months while on their first working holiday visa may be eligible for a second visa and may return to work for a further six months for an employer with whom they worked on their first visa.

¹²⁶ 230 of the 10,800 employers surveyed by Department of Education, Employment and Workplace Relations between Sep-2011 and Sep-2012 were in the 'Agriculture, Forestry and Fisheries' industry.

¹²⁷ DEEWR (2012). Agriculture, Forestry and Fishing Employment Outlook, Australian Government

¹²⁸ Eastwood C, Nettle R (2010). Growing dairying in the Murray Irrigation region: understanding dairy farm workforce needs and challenges, Report for Murray Dairy, Dairy Australia, September 2010.

Where dairying sits in the labour market

- There are a number of visa options for Australian employers to sponsor and employ skilled workers who have recognised qualifications and skills or experience in particular occupations required in Australia. Some of these have been used by dairy farm businesses to recruit staff: the subclass 457 Business (Long Stay) visa¹²⁹; the Employer Nomination Scheme¹³⁰; and the Regional Sponsored Migration Scheme¹³¹.

One in 5 farms is expecting make staff changes in the next 12 months

Sources: NDFS 2009 to 2012 (~1000 farms each year)

Year	Farms expecting to make changes	Farms expecting to recruit	Farms that employ expecting to put people off
2009	14% farms	10%	4%
2010	18% farms	17%	3%
2011	20% farms	18%	3%
2012	19% farms	17%	3%

Farmers anticipated putting on about 1,662 people in 2012

Sources: ADIF 2012; NDFS 2009-2012 (between 104-174 survey herds that expect to recruit each year)

State	2009	2010	2011	2012
Victoria	518	1055	1218	1017
NSW	169	183	259	185
Queensland	146	68	43	94
SA	21	112	81	101
Tasmania	62	127	104	155
WA	34	61	57	51
NATIONAL	1,044 people	1,700 people	1,815 people	1,662 people

**For each state: Σ (# herds from ADIF / # herds in NDFS) * # recruits anticipated in NDFS

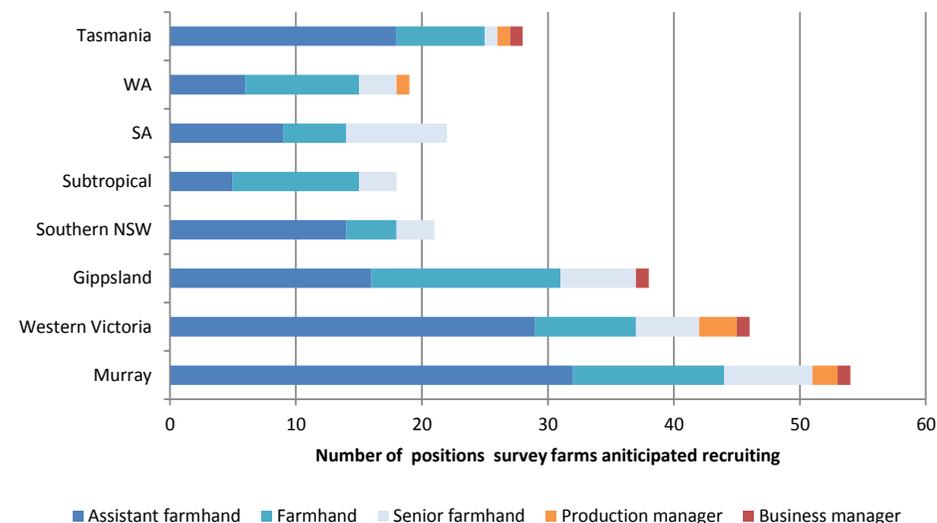
¹²⁹ The subclass 457 Business (Long Stay) visa: Standard Business Sponsorship allows employers to sponsor approved skilled workers to work in Australia on a temporary visa for a period of between one day and four years

¹³⁰ The Employer Nomination Scheme (ENS) enables employers to sponsor highly skilled workers to fill skilled vacancies in their business. Skilled workers can be recruited either from overseas, or from people temporarily in Australia. The position must provide full-time employment in Australia for at least three years and meet the market salary rate. The ENS visa is a permanent visa.

¹³¹ The Regional Sponsored Migration Scheme (RSMS) enables employers in regional and low population growth areas of Australia to sponsor highly skilled workers either from overseas, or from people temporarily in Australia to fill skilled vacancies in their business. The position must provide full-time employment in Australia for two years. In all cases, conditions of employment and wages must comply with Australian legislation and awards.

Demand for farmhands was high in all regions in 2012

Source: NDFS 2012 (1002 farms)



In 2012 many people working as assistant farmhands were new to the industry

Source: NDFS 2012 (1002 farms)

Position	Employees in this position	People in this position who started in last 12 months	Starters who are new to industry
Assistant farm hands	31% people	32% people	100%
Farm hands	30% people	24% people	53%
Senior farm hands	30% people	14% people	13%
Production managers	5% people	9% people	None
Business managers	2% people	5% people	None
TOTAL	98% people	22% people	67%

Where dairying sits in the labour market

Success in filling vacant positions in 2006

Source: NDFS 2006 (190 farms in Victoria that had tried to employ someone in the last 12 months)

Farms in Australia trying to fill positions in 2006 ^a	Farm manager/ sharefarmer ^b	Farmhand	Relief milker	ALL farms with positions vacant
Full-time				
Filled	6%	32%	3% ^c	41% farms
Not filled	2%	8%	1% ^c	11% farms
Part-time				
Filled	None	5%	6%	12% farms
Not filled	None	1%	2%	3% farms
Casual				
Filled	None	9%	18%	27% farms
Not filled	None	1%	4%	5% farms
ALL	8% farms	57% farms	35% farms	100%
Time taken to fill				
Within a month	63%	67%	76%	70% farms
In 2-6 months	29%	29%	20%	26% farms
More than 6 months	8%	4%	4%	5% farms

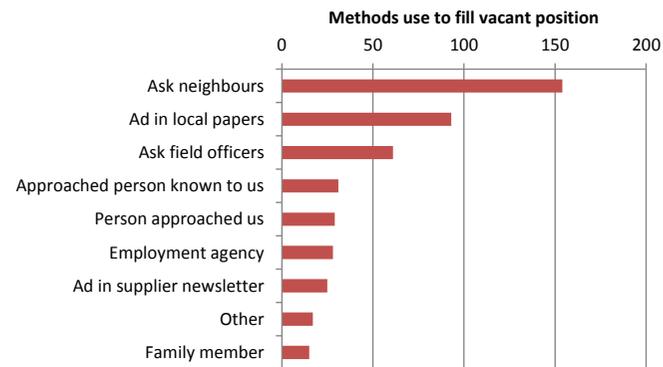
(a) Reported for Victoria as NDFS information not collected for regions in 2006

(b) Use with caution due to small numbers of vacancies for managerial positions

(c) Respondents in this category were probably referring to milkiers rather than relief milkers

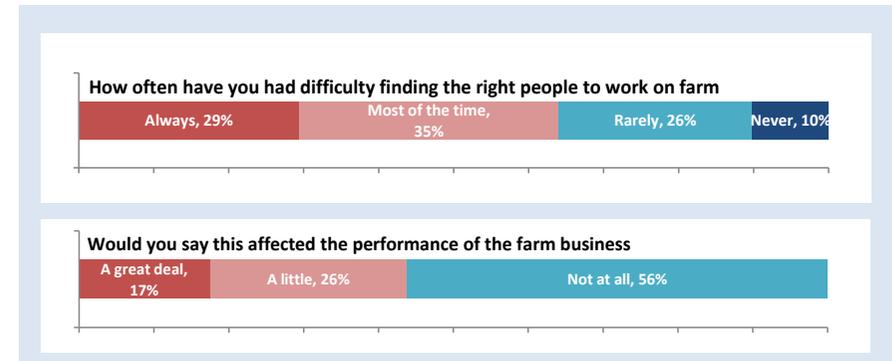
Farmers often tried more than one method to fill a vacant position

Source: NDFS 2006 (408 herds that had tried to fill a position in the last 12 months)



64% of farmers had difficulty finding the right people to work on farm

Source: NDFS 2008 (592 farms that farms had tried to recruit in the past 5 years, 2003-2008)



Where dairying sits in the labour market

Retaining staff

Difficulties in retaining employees in the agricultural sector centre on 4 key issues: poor working conditions, lack of career development and promotion opportunities, a lack of focus on Workplace Health & Safety, and the availability of alternative employment (Nettle *et al* 2011¹³², Allen Consulting Group 2012¹³³).

Job attractiveness, career development and confidence in the industry as a stable career option are all important if people are to stay in the industry. Employers must be both willing and able to offer staff competitive working conditions and visible career paths.

- The dairy industry initiated a program of work around the people in dairy following a consultancy in 2004 which noted the high rates of turnover and exits from the industry and found “significant leadership, organisation and resources” was required to improve retention of people on dairy farms (acirrt 2004¹³⁴).
- Staff turnover is costly because of the loss of expertise, pressure placed on the remaining people and expense of recruitment and training. Turnover is estimated to cost 50–150% of an employee’s annual salary (Billikopf 2012¹³⁵). This crudely converts to an annual cost of \$30 million every year borne by farmers based on 1,500 positions replaced at \$20,000 each.
- One study estimated the average turnover rate¹³⁶ in the dairy industry to be 35% and the proportion of people that needed to be recruited from outside the industry each year to be 15.5% (Nettle *et al* 2011).
- Farmers had a mix of experience around the ease of retaining people when this was question was asked in 2008. Of the 63% of farmers who answered, some (56%) had found it easy and some (37%) had found it difficult (NDFS 2008).
- Farmers in the Murray region and Subtropical dairy areas had more difficulty than other regions in retaining people (NDFS 2008).
- Larger herds also rated it as more difficult to keep people (NDFS 2008). This could be because it IS more difficult OR because it is a high priority for their business.

¹³² Nettle R, Semmelroth A, Ford R, Zheng C, Ullah A (2011). *Retention of people in dairyfarming – what is working and why? Report to the Gardiner Foundation, The University of Melbourne, August*

¹³³ Allen Consulting Group (2012). *Skills and training needs of the agricultural sector in Hume, Loddon Mallee and South East Metro, Allen Consulting Group, August*

¹³⁴ acirrt (2004). *Dairy Employment for the future, The strategy, Prepared for the United Dairyfarmers of Victoria, WestVic Dairy and the Geoffery Gardiner Dairy Foundation by the University of Sydney’s Australian Centre for Industrial Relations Research and Training, July*

¹³⁵ Billikopf G (2012). *Turnover rates are decreasing in California dairies, California Agriculture, 66(4):153-157*

¹³⁶ Average turnover rate = number of employees who have left a job / total number of employees in farming

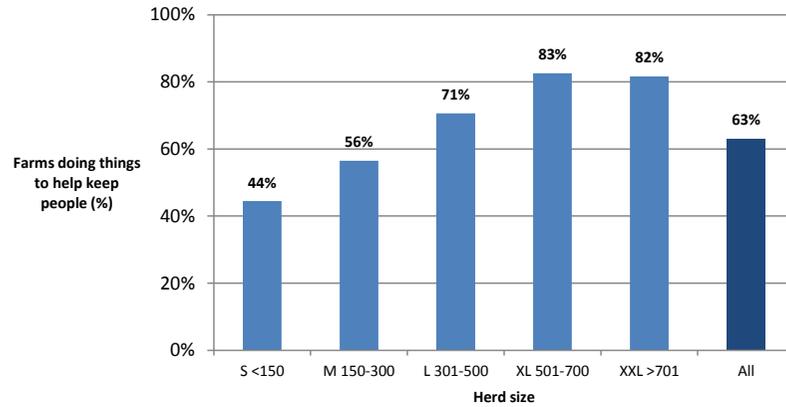
- Owners and managers of large herds are more likely to do things to help keep employees on the farm (NDFS 2011).
- 78% of farmers believed difficulties with keeping people had affected the performance of their farm business (NDFS 2008).
- The more cows in the milking herd, the more likely employers will offer some form of incentive to encourage employees to stay (NDFS 2011). This could take the form of time off, paid training, fuel or housing or bonuses.
- In a survey of workforce needs in the Murray Irrigation region, three people who were interviewed because they had been previously employed in the region all gave long hours, lack of opportunity for increased responsibility and pay rates as reasons for moving on (Eastwood and Nettle 2010). Other industries seemed attractive due to constant income, potentially higher rates of pay, and stable, more suitable working hours.
- These former employees also suggested younger staff needed to see some progression in responsibility and pay after 2 years otherwise they were at risk of moving on (Eastwood and Nettle 2010).
- People currently employed on farm in the same survey believed it was important to make a worker’s family feel included as it can often be the partner who decides to leave the farm (Eastwood and Nettle 2010).
- Employees attributed the high turnover of relief milkers or casual staff in the Murray Irrigation region to commuting distances and “getting sick of the job” (Eastwood and Nettle 2010).
- Employers in the Murray Irrigation region had also noted an increasing demand from potential recruits for more regular and stable work hours between 9am and 5pm (Eastwood and Nettle 2010).
- Employers in the survey said relief milking was becoming a more obvious option for people as an after-school or additional job, with people coming “out from town after 3pm” (Eastwood and Nettle 2010).
- In the Murray region there are some examples of job-sharing arrangements to retain people in work and keep people in the industry (Eastwood and Nettle 2010).
- There is no industry information on the workplace culture on dairy farms.

Refer to the section on ‘Training and development’ (page 81) for information on career paths in the industry.

Where dairying sits in the labour market

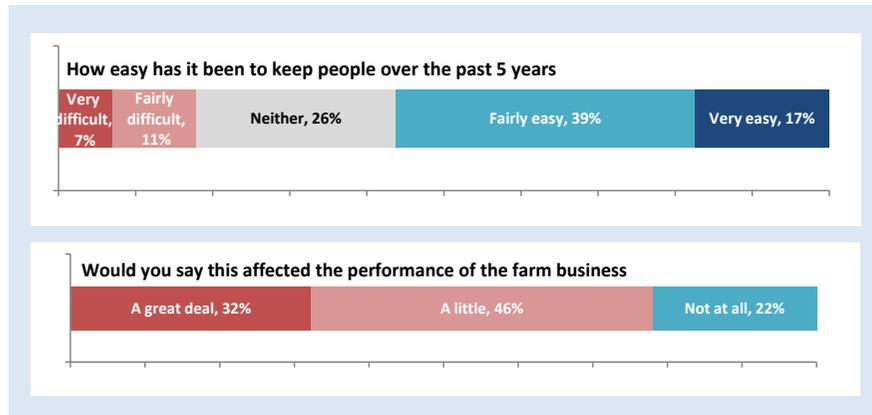
Larger herds are more likely to offer incentives to retain employees

Source: NDFS 2011 (664 of 665 herds where people worked in paid roles)



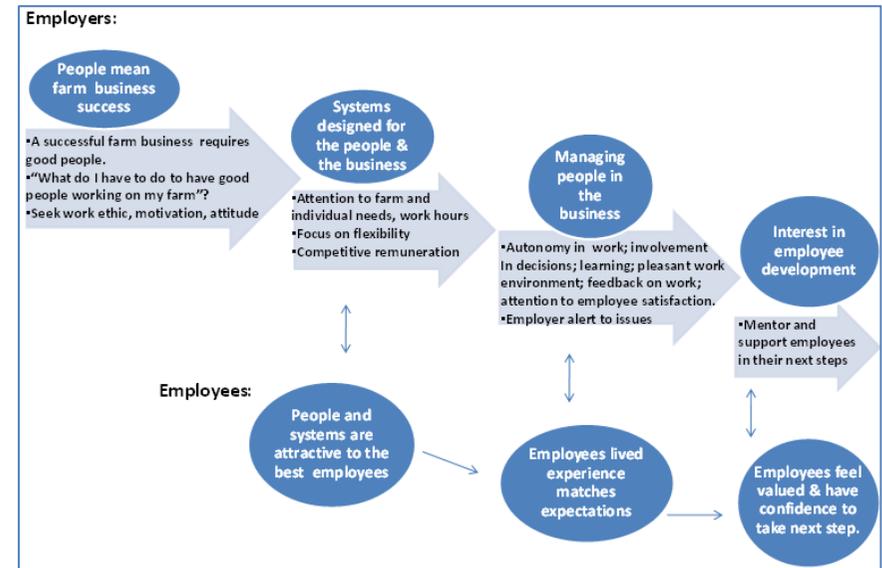
Difficulties with keeping people affected farm business performance

Source: NDFS 2008 (631 of 734 farms with employees)



What works in retaining employees on dairy farms, and why

Source: Nettle et al 2011¹³⁷ (synthesis from 9 case studies and a survey of 31 dairy farm employees): Figure 5



¹³⁷ Nettle R, Semmelroth A, Ford R, Zheng C and Ullah A (2011). Retention of people in dairying – what is working and why? Report to the Gardiner Foundation, The University of Melbourne, August

Where dairying sits in the labour market

Points of interest

- Five industries account for 47% of the employment in the dairy regions: Healthcare and social assistance; Retail trade; Manufacturing; Construction; and Education and training.
- Agriculture, and dairying more specifically, are of varying importance to each dairy region in terms of employment. Dairy farms represented a significant proportion of agricultural enterprises in Western Victoria, Tasmania and the Murray region.
- The total population in the dairy regions has increased by 10% between 2006 and 2011, especially in the Subtropical Dairy region.
- Populations in dairy regions have higher levels of educational attainment than regional (non-metropolitan) Australia, particularly in studies at the Bachelor degree and higher levels.
- Amongst youth (population aged 15-24 years) levels of participation and attainment in post-compulsory studies are relatively low in dairy regions outside Victoria and NSW South.
- The level of educational attainment, labour market profile and prospects for jobseekers varies considerably between dairy regions, highlighting the importance of regional approaches to workforce development.
- Between 2006 and 2011 the dairy regions changed to having more women in the workforce and more men working part-time.
- Incomes in 2011 had increased since 2006. At \$880, the median weekly earnings for people in dairy farming was the same as those employed in the agricultural sector more broadly.
- The high demand for farmhands continues in all regions.
- The difference in forecast demand versus the actual numbers employed a year later suggests that there is a need to monitor workforce changes on an annual basis.

Information gaps

- More detailed information on the importance of dairying to each region.
- More information on the mobility of people in the dairy industry as this is critical for understanding labour flows within and between dairying regions.
- More detail on the nature of turnover and exits of people (are the exits from dairying, agriculture or the region?). Three measures of retention relevant to dairy farming would be separation rate¹³⁸, accession rate¹³⁹ and the stability index¹⁴⁰ (Nettle *et al* 2011¹⁴¹).
- More detail on the new positions on farm: the extent to which they represent expansion or re-organisation in the business.
- Information on the extent of size and scale of dependence on independent contractors and impact of seasonal nature of work, and the use of casual positions.
- Learning more about the length of tenure of farm business managers and share farmers and their reasons for staying or going is a high priority given their importance to the viability and stability of the farm business.
- Options for filling skills gaps (eg attitudes towards use of contractors, farm consultants, service providers; strategies to meet growing/changing business requirements).
- Arrangements on dairy farms around the employment of overseas workers (there is no data on this in the ABS census).

¹³⁸ Separation rate reflects the tendency to leave a business regardless of employment status and provides the broadest indication of a turnover problem

¹³⁹ Accession rate reflects the number of new entrants to the business because of people exiting and is considered an indicator of 'churn'

¹⁴⁰ Stability index is the ration of employees with a year or mores service to the number of people employed a year ago and is an indicator of the retention of more experienced staff

¹⁴¹ Nettle R, Semmelroth A, Ford R, Zheng C, Ullah A (2011). Retention of people in dairyfarming – what is working and why? Report to the Gardiner Foundation, The University of Melbourne, August

Where dairying sits in the labour market

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The people on farm

When there is a choice, people prefer employment in industries that offer safe, rewarding and satisfying work

The people on farm

This section aims to develop the understanding of the people who work on farms and their conditions of work – not just paid employees but also the owners, sharefarmers, contractors and those (usually family members) who do unpaid jobs.

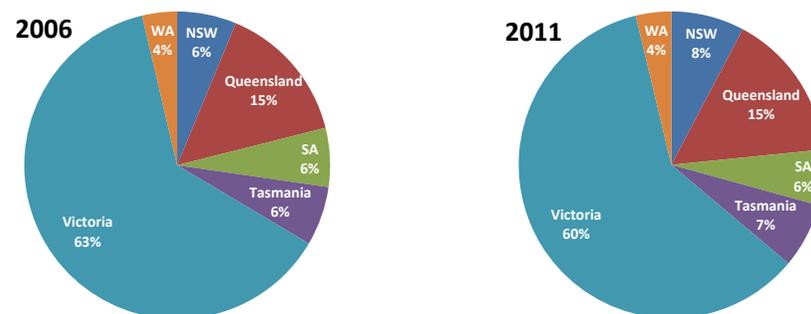
Farms that offer decent work are better equipped to attract and retain the people they need. This involves having people with the right skill level and experience doing a job that needs to be done, giving them work that is satisfying and rewarding as well as a career path, and actively considering their health and well-being.

- It is estimated that 24,750 people across Australia worked in dairy cattle farming in FY11-12 (DAFF 2013¹⁴²). 91% of the people on farm work in the dairy regions¹⁴³.
- 60% of the dairy farm workforce is in Victoria (ABS dairy 2011). The Murray region has the largest employment share (at 22.2%), followed by Gippsland (20.5%) then Western Victoria (19.8%).
- The number of people on farm has increased by 20% between FY06-07 and FY11-12 (DAFF 2009¹⁴⁴ & 2013). (Note this data contrasts with the ABS census data which shows a 15% contraction in the dairy farm workforce between 2006 & 2011, with reductions in all Australian states¹⁴⁵.)
- The number of people working on farm peaked in 2009 (DAFF 2009 & 2013, NDFS 2007-2012).
- In 2011, 50.7 % of the people working on farm were owners or managers, 38.0% were employees and 10.4 % were contributing family workers (ABS dairy 2011).
- The proportion of the dairy farm workforce that are owner-managers was higher in the Victorian dairy regions (at 56%) compared to all other regions (around 44%) (ABS dairy 2011).
- The proportion of the dairy farm workforce that are employees has increased from 31.2% in 2006 to 38.0% in 2011 (ABS dairy 2006 & 2011). Employees comprise more of the farm workforce in Southern NSW, SA, WA and Tasmania.
- The proportion of contributing family workers was slightly higher in the Murray and Subtropical Dairy regions (ABS dairy 2011).

- Two-thirds of the people working on farm are male (ABS dairy 2011).
- The majority of the people on farm work full-time (72.5%) while 22.1% work part-time hours (ABS dairy 2011). (Note the ABS data does specify employment status, whether people are permanent part-time, casual, temporary or in some other arrangement.)
- The proportion of people working full-time in the 2011 census is consistent with the employment status described in 2005: where 70% of people worked full-time, 18% worked part-time and 12% were in casual positions (NDFS 2005).
- In 2006, 58% of part-time workers were women (ABS 2006). (An update of this figure is not available for 2011.)
- The proportion of people working part-time has increased from 19.8% in 2006 to 22.1% in 2011 (ABS dairy 2006 & 2011). The proportion of people on dairy farms working part-time is highest in WA (26.2%) and Southern NSW (25.4%).
- On average Dairy Industry Farm Monitor Project farms in the Murray region had 2.9 Full Time Equivalents (FTEs) with owner-operators contributing 1.5 FTE, employed labour 1.3 FTE and contract labour 0.1 FTE (DIFMP 2013).

60% of people working on dairy farms are in Victoria

Sources: ABS dairy 2006 (21,850 people) & 2011 (18,728 people)



¹⁴² DAFF (2013). Australian Food Statistics 2011-12, Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra

¹⁴³ Dairy regions are Statistical Local Areas in regional Australia where 20 or more people work in the industry

¹⁴⁴ DAFF (2009). Australian Food Statistics 2008, Department of Agriculture, Food and Fisheries, Australian Government, Canberra

¹⁴⁵ The number of people working in dairy cattle farming comes from the ABS Labour Force Survey, the ABS Population & Housing census data or the National Dairy Farmer Survey: see page 10 for more explanation.

The people on farm

The dairy farm workforce increased by 20% between 2007 & 2012^a

Sources: DAFF 2009¹⁴⁶ & 2013¹⁴⁷

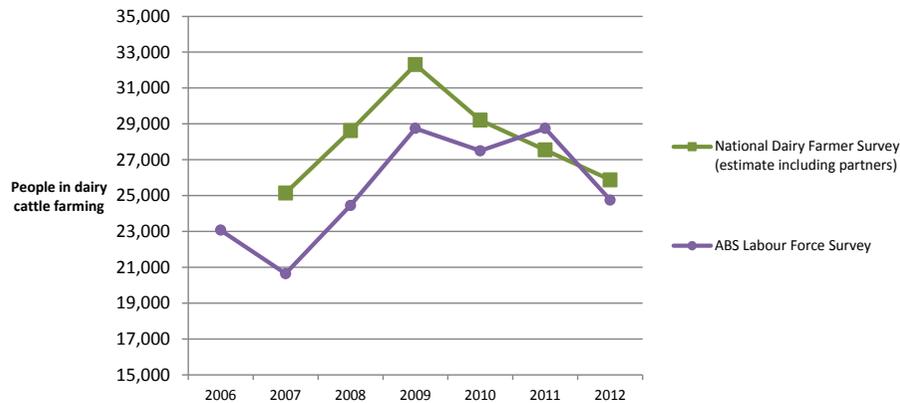
State	FY06-07	FY11-12	Change since 2006 ^a
Victoria	12,875	16,250	↑26%
New South Wales	1,050	2,250	↑114%
Queensland	2,700	2,000	↓26%
South Australia	1,175	2,500	↑113%
Tasmania	1,475	1,500	↑2%
Western Australia	1,175	250	↓79%
TOTAL	20,650 people	24,750 people^a	↑20%^b

(a) The size of the dairy farm workforce and distribution in each state shown above is based on the ABS Labour Force Survey and is different to that described by the ABS census (as per page 10)

(b) These trends contrast with the ABS census data which show a 15% contraction between 2006 & 2011

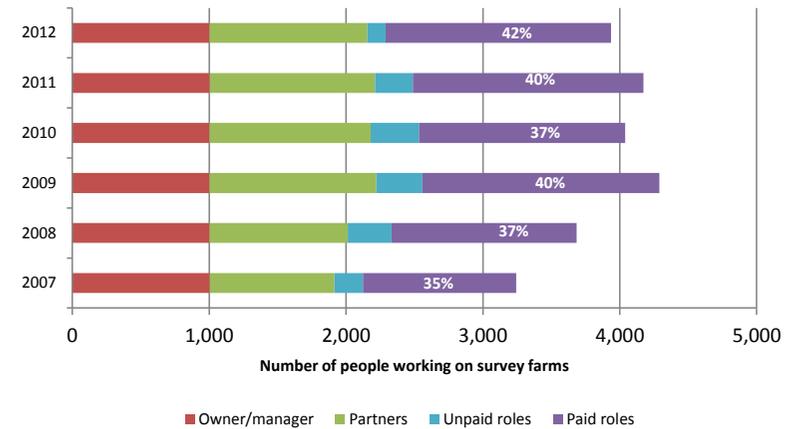
The number of people working on farm peaked in 2009

Sources: (1) DAFF 2009 & 2013; (2) NDFS 2007-2010



People working in paid roles has increased by 7% between 2007 & 2012

Source: NDFS 2007-2012 (about 1000 farms each year)



38% of the farm workforce is employees (from 31% in 2006)

Sources: ABS dairy 2006 (21,998 people); ABS dairy 2011 (18,728 people)

Across Australia	2006	2011
People on farm	21,998 people	18,728 people
Owner-managers	58.5%	50.7%
Employees	31.2%	38.0%
Contributing family workers	9.5%	10.4%
Gender		
Male	65.4%	66.4%
Female	34.6%	33.6%
Employment status^a		
Full-time	74.4%	72.5%
Part-time	19.8%	22.1%

(a) Note there was a high rate of non-response to the question on employment status in the census

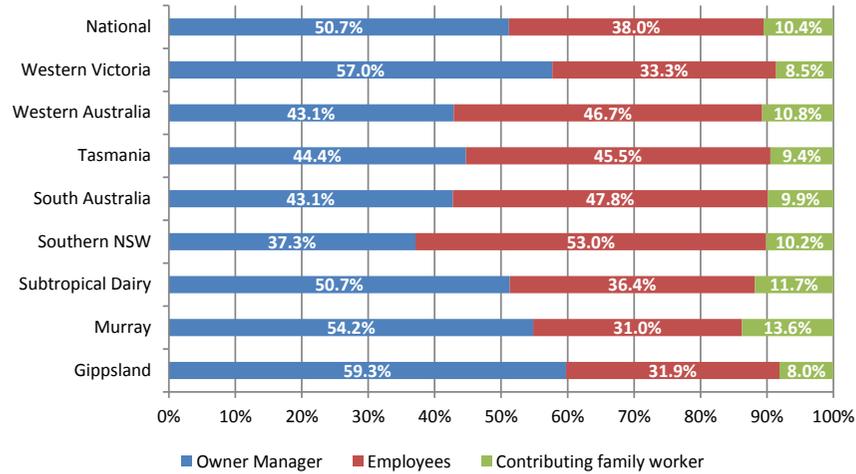
¹⁴⁶ DAFF (2009). Australian Food Statistics 2008, Department of Agriculture, Food and Fisheries, Australian Government, Canberra

¹⁴⁷ DAFF (2013). Australian Food Statistics 2011-2012, Department of Agriculture, Food and Fisheries, Australian Government, Canberra

The people on farm

Gippsland has the highest proportion of owner-managers of all regions

Source: ABS dairy 2011 (18,728 people who work on dairy farms)



In 2005, 58% of the farm workforce were full-time family members

Source: NDFS 2005 (1274 farms) - this is the most recent detailed data on employment status on farms

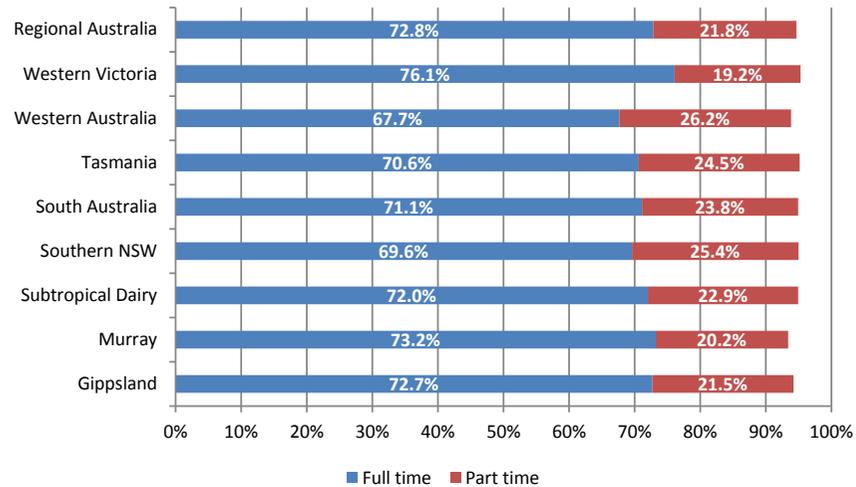
In 2005	Family members ^a	Employees	TOTAL
Full-time	58%	12%	70%
Part-time	13%	5%	18%
Casual ^b	4%	8%	12%
ALL workers	75%	25%	100%

(a) This includes the owner/manager

(b) This refers to people being paid casual loading

WA has the highest proportion of people working part-time on farms

Source: ABS dairy 2011 (18,728 people who work on dairy farms)



The people on farm

Owner-managers

- 50.7% of the people on farm are owner-managers (ABS dairy 2011).
- Farm owners are in the business of wealth creation as well as earning a living. Their hours tend to be elastic (Pauline Brightling personal communication). This is also often the case for farm managers employed on a package.
- 51.5% of owner-managers are over the age of 50 (ABS dairy 2011). This figure is even higher for Subtropical Dairy.
- The age distributions of owner-managers and employees are quite different with almost 80% of employees being under 50 years of age (ABS dairy 2011).
- While people in Australia work 1,693 hours a year on average (OECD 2013^{148 149}), dairy farm owners and managers worked twice these hours in 2008 (NDFS 2008).
- 70.2% of owner-managers work 50 hours or more per week and 28.7% work over 80 hours per week (ABS dairy 2011). These extended hours were consistently high across the regions and only slightly down from 2006.
- The hours worked by men each week was similar regardless of their role on farm: be they an owner, manager or a sharefarmer (NDFS 2008).
- The hours worked by women varied a lot (NDFS 2008). However female farm managers worked on average 10 hours more per week than males in the same role in 2008.
- In 2008, workload prevented most people (80%) participating as often as they would like in leisure activities and other interests – with only 19% of farmers participating as often as they wanted (NDFS 2008). Pressures other than just the hours worked are contributing to this sense of workload.
- Not being able to participate in other activities affected peoples' satisfaction with farming. People who NEVER participated in other interests were more likely to be dissatisfied than others (NDFS 2008).
- In FY10-11, participants in the Dairy Industry Farm Manager Project had taken 15 days of holidays on average (DIFMP 2011). 16% had taken less than 10 days and 13% took no holiday time at all.

¹⁴⁸ OECD Better Life Initiative, 'Your Better Life Index, Country Notes' viewed at www.oecd.org/betterlifeindex, September 2013

¹⁴⁹ Although the average for Australia is lower than the average for all OECD countries of 1,776 hours, a higher proportion of Australian employees work very long hours (14% compared to the OECD average of 9%) with this figure being higher for men (21% compared to the 6% average for women)

- More owner-managers had a higher income (above \$1,000 per week) in 2011 (34.3%) compared to 2006 (24.7%) (ABS dairy 2006 & 2011).
- 19.2% of owner-managers draw an income of less than \$400 per week (ABS dairy 2006). This figure is higher for owner-managers in the Subtropical Dairy and Murray regions.

Age, hours & income of owner-managers differ to employees

Sources: ABS dairy 2006 (21,998 people); ABS dairy 2011 (18,728 people)

Across Australia	Owner-managers		Employees
	2006	2011	2011
Age			
18 and younger	0.3%	0.1%	8.9%
19 to 24 years	1.6%	1.3%	18.1%
25 to 29 years	3.8%	3.5%	13.3%
30 to 49 years	47.5%	43.6%	39.0%
50 years and older	46.9%	51.5%	20.7%
Hours worked per week			
Less than 20 hours	6.8%	9.0%	18.2%
20 to 34 hours	8.4%	9.0%	15.0%
35 to 49 hours	11.8%	11.7%	31.6%
50 to 64 hours	23.3%	21.9%	21.6%
65 to 79 hours	21.0%	19.6%	7.6%
80 hours or more	28.7%	28.7%	6.0%
Weekly income			
Less than \$400	24.6%	19.2%	21.0%
\$400 to \$1000	50.7%	46.5%	58.8%
\$1000 and above	24.7%	34.3%	20.3%

Dairy farming owner-managers work long hours

Sources: (1) ABS catalogue 6105.0, October 2010; (2) NDFS 2008

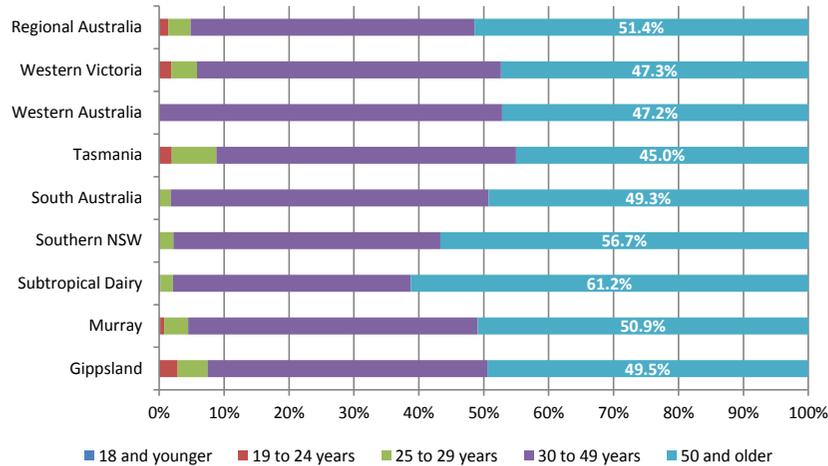
Who	Average hours	Weeks per year
Employed Australians (in 2010) ^{1a}	33.0 hours per week	48 weeks
Managers	43.3 hours per week	
Australian dairy farmer owner-managers (in 2008) ²	67.8 hours per week	50 weeks

(a) Average hours for all employed persons, both full-time & part-time

The people on farm

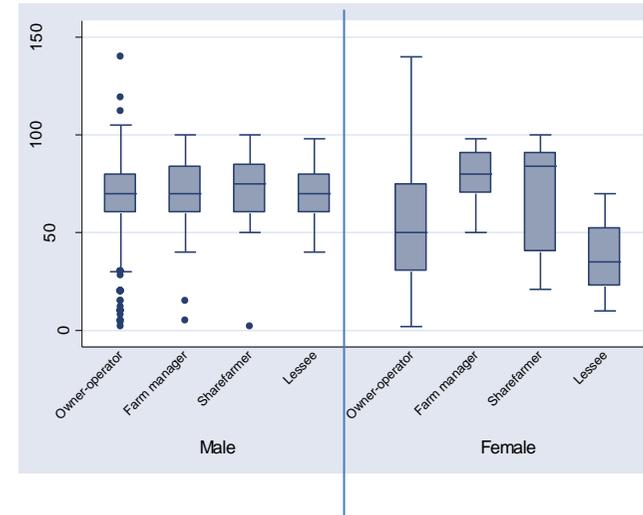
More owner-managers in Subtropical Dairy are over the age of 50

Source: ABS dairy 2011 (9,503 dairy farming owner-managers)



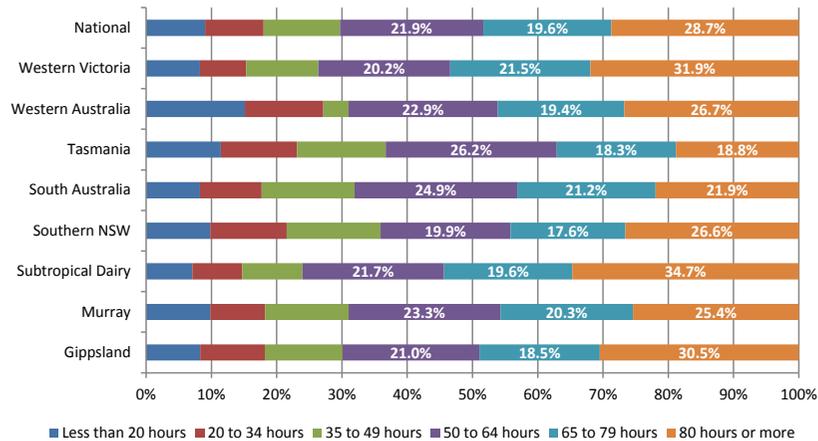
Men work similar hours irrespective of their role but this is not the case for women

Source: NDFS 2008 (998 survey herds)



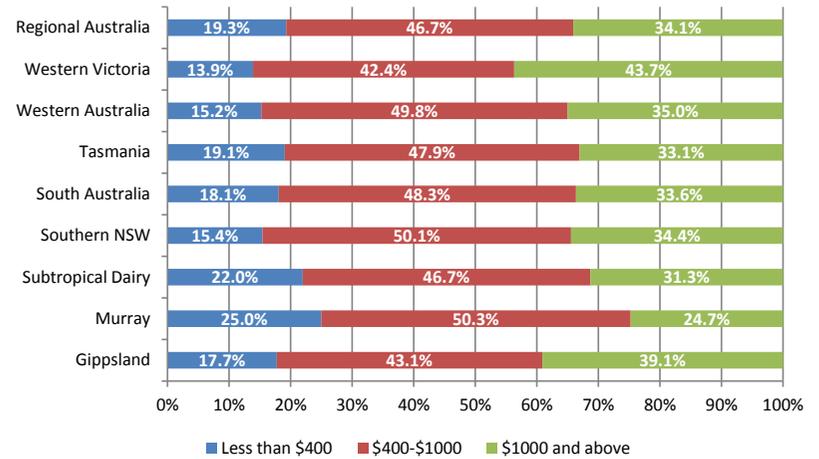
Many owner-managers work extended hours

Source: ABS dairy 2011 (9,503 dairy farming owner-managers)



One in 5 owner-managers draws an income of less than \$1000 per week

Source: ABS dairy 2011 (9,503 dairy farming owner-managers)



The people on farm

Skills, knowledge and use of services

The skill set required to manage dairy farms continues to expand as farmers must comply with new regulations, respond appropriately to financial pressures, adopt new technologies and become good employers.

- Dairy farmers believe that investing in training is important for the success of their farm business and the progress of the industry. In a market survey in 2009, 277 farmers rated both outcomes highly, 7.9 on average on a scale of 0-10 (Dairy Australia¹⁵⁰).
- In 2011, about 45% of farmers intended to participate in training and skills activities (Dharma *et al* 2012). As with previous years herd nutrition/feeding management then pasture management were the most popular topics.
- Conversely more than half of farmers thought it unlikely they would undertake any training or skills development in the coming year (Dharma *et al* 2012). This was similar to previous surveys (Mackinnon *et al* 2010, Lubulwa and Shafron 2007).
- Dairy farmers use a range of information sources to assist with their business decision-making, with other farmers and family being the most common source (Dharma *et al* 2012¹⁵¹).
- Surveys consistently show farmers consult other farmers before making decisions. The challenge for industry is how these networks might be used to best effect. Most farmers learn in informal settings and the importance of peer social networks¹⁵² in information transfer cannot be understated. These relationships provide opportunities to share information, knowledge and innovation. Social capital held in social networks is a source of trust, reciprocity, adaptability and resilience. Well-connected networks enable relationships that facilitate change (King 2009¹⁵³).
- Although field days are popular, farmers regard discussion groups as the most valuable for helping make farm management decisions (Dharma *et al* 2012).

¹⁵⁰ This finding was from a stakeholder tracking survey conducted by Dairy Australia in 2009 to ascertain the awareness and views of farmers on the NCDEA.

¹⁵¹ Dharma S, Shafron W & Oliver M 2012 Australian dairy Farm technology and management practices 2010-11, ABARES, Canberra, August

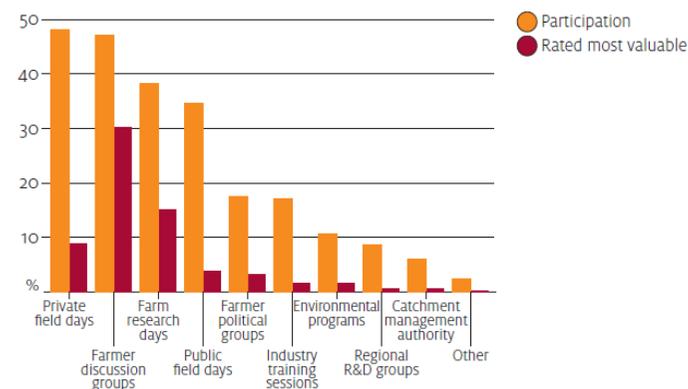
¹⁵² A social network is a set of ties that links people and/or organisations together

¹⁵³ King B (2009). Reaching further with social network analysis, Presentation to RIRG Annual Symposium, Melbourne August

- Company representatives and consultants have replaced state departments of agriculture as a main source of advice for some activities such as fertiliser management (Mackinnon *et al* 2010).
- An analysis of ABARES data for broadacre farms (sheep, beef, dairy, grains/mixed farms and horticulture) reported in Wilkinson *et al* 2011¹⁵⁴ showed the use of paid advisory services is well established and rising on the largest 10-15% of farms, but has made little penetration into the rest of the farm sector.
- Dairy farmers access service providers more than other farming sectors (Wilkinson *et al* 2011). It was also shown in this study that a few large farms were responsible for more than half the expenditure on consultants.

Farmers value discussion groups as a source of information & advice

Source: Dharma *et al* 2012 (314 dairy farms across Australia in FY10-11): Figure 17 Participation and rating of activities 2010-11



¹⁵⁴ Wilkinson R, Barr N, Hollier C (2011). Segmenting Victoria's farmers, Farm Services Victoria Division, Department of Primary Industries Victoria, Rutherglen, December

The people on farm

What the top performing family farm businesses say about training & education

Source: Bone 2005 (308 people who work on family farms in NSW and Victoria)

Agree or strongly agree that...

Businesses which regularly train managers or employees perform better than those businesses that do not engage in training

Academic and industry leaders are a very important way for farmers to expand their horizons and develop new ideas

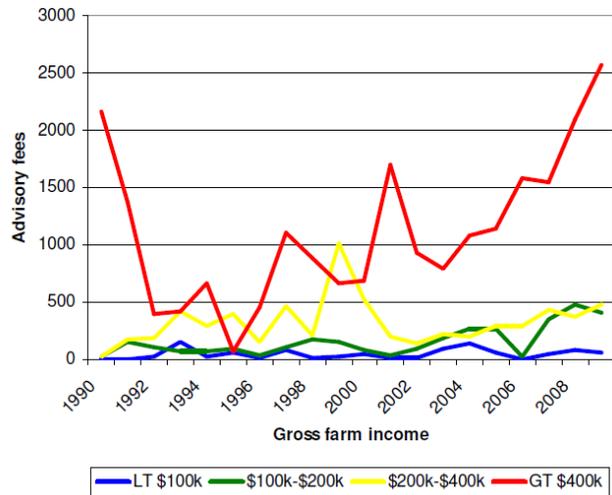
Highly trained people often lack the common-sense necessary to run a profitable farm

Too many courses are run by academics or failed farmers who don't really know what it takes to be profitable

Most farmers need personal contact and discussion when training as it helps to reach an understanding of how others think

Use of paid advisory services is well established on large farms

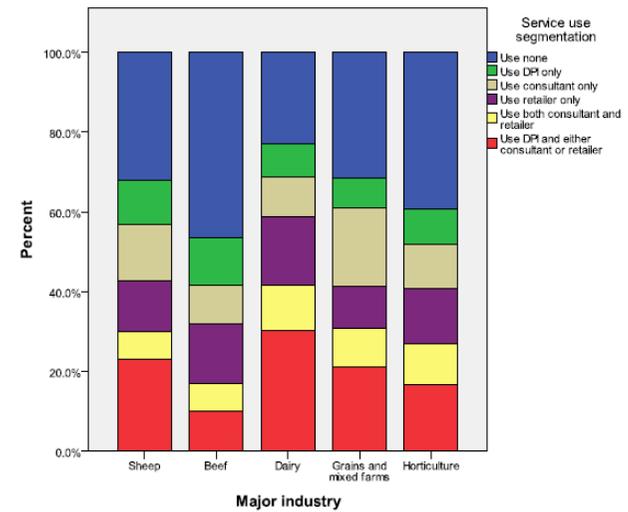
Sources: Wilkinson et al 2011¹⁵⁵: Figure 17 Average annual amount spent on advisory fees by gross farm income, Victorian broadacre farms (ABARES data)



¹⁵⁵ Wilkinson R, Barr N, Hollier C (2011). Segmenting Victoria's farmers, Farm Services Victoria Division, Department of Primary Industries Victoria, Rutherglen, December

Dairy farmers access service providers more than other farming sectors

Sources: Wilkinson et al 2011¹⁵⁶: (1300 Victorian farms surveyed in June 2010, including about 220 dairy farms):
Figure 24 Downturn segmentation by industry



¹⁵⁶ Wilkinson R, Barr N, Hollier C (2011). Segmenting Victoria's farmers, Farm Services Victoria Division, Department of Primary Industries Victoria, Rutherglen, December

The people on farm

Employees

- 7,117 people were employed on dairy farms in 2011 (ABS dairy 2011). Employees now comprise 38% of the farm workforce, up from 31% in 2006 (ABS dairy 2006).
- 93% of the farms that employ have people in (assistant to senior) farmhand positions (NDFS 2012). 91% of people are employed in farmhand positions, 5% as production managers, and 2% as business managers.
- In 2006, 72 % of employees were male (ABS dairy 2006). (This information was not available in the ABS dairy 2011 spreadsheet.)
- Farm employees are generally young with 40% under the age of 29 and a further 39% between 30 and 49 (ABS dairy 2011).
- Tasmania has more employees less than 30 years of age, whilst the Murray and Subtropical Dairy regions have more employees above 30 (ABS dairy 2011).

40.3% of employees are 29 years of age or under

Sources: ABS dairy 2006 & 2011

	2011	Change since 2006 ^a
Employees on dairy farms	7,117 people	6, 863 people
Age		
18 and younger	8.9%	↓ 17 points
19 to 24 years	18.1%	↓ 7 points
25 to 29 years	13.3%	↑ 3 points
30 to 49 years	39.0%	↓ 6 points
50 years and older	20.7%	↑ 27 points

(a) Each point equals 0.1%

Some dairy farm employees come from overseas under the visa arrangements described on page 61.

91% of people are employed as (assistant to senior) farmhands

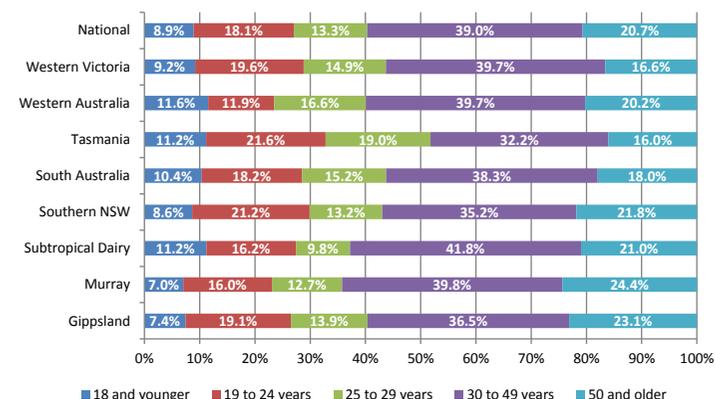
Source: NDFS 2012 (636 farms that employ)

Position	Farms with this position ^a	Employees in this position...
Assistant farm hands	44% farms	31% people
Farm hands	42% farms	30% people
Senior farm hands	47% farms	30% people
Production managers	8% farms	5% people
Business managers	6% farms	2% people

(a) Some farms employ multiple people

Tasmania has more young employees

Source: ABS census 2011 (7112 dairy farm employees)



The people on farm

Hours & income

Effective deployment and retention of staff occurs in workplaces that offer decent work (farms that have good workplace culture, work-life balance, recognition and reward, page 63).

- People working on dairy farms come under a range of award classifications and remuneration rates – typically 5 classifications described in the federal Pastoral Award 2010 (The People in Dairy).
- Dairy farm employees work long hours with 36.8% working over 50 hours a week compared to 13.0% of all other (dairy and non-dairy) employees in the dairy regions (ABS dairy 2011). Extended employee hours feature in all dairy regions.
- More people in 2011 work less than 35 hours a week or more than 80 hours compared to 2006 (ABS dairy 2006 & 2011).
- It's not certain how employees view extended hours (whether they are burdensome or an opportunity to earn more). However having the flexibility to match work patterns with an individual's need is important (Ruth Nettle personal communication).
- People on dairy farms do not work the typical business hours. Split shifts are common, often starting early (4 am onwards) and finishing by early evening. However there are few objective descriptions of work patterns and employment status (full-time/part-time) in the industry.
- Employees on dairy farms (working full-time and part-time) were typically earning more in 2011 than they were in 2006; with the proportion earning more than \$400 a week increasing from 70.3% to 78.7%, and the proportion earning more than \$1,000 a week increasing from 7.8% to 19.4% (ABS dairy 2006 & 2011).
- Nevertheless dairy farming employees still earn less than other employees in the region (ABS dairy 2011). 19.4% of farm employees earn \$1,000 a week or more compared to 35.8% of all employees in the region.
- More dairy farm employees in the Subtropical Dairy region are low income earners than any other region (ABS dairy 2011).
- 63% of the (665) farms in the National Dairy Farmer Survey that employ one or more people provide additional incentives to their workers (NDFS 2011). The nature of the incentive (such as flexible work times, additional time off, paid training, bonuses, fuel or housing) was not specified.

2010 Pastoral Award classifications & typical remuneration rates

Source: The People in Dairy

Job category and features	Pastoral Award 2010 ^a	Training level ^b	Remuneration range	Hourly rate ^c
Assistant farm hand: Works under supervision	FLH1	Cert II	\$33-45,000	\$16.50-18
Farm hand: Works under limited supervision	FLH3	Cert III	\$38-50,000	\$18-22
Senior farm hand: Skilled, works independently or as part of a team	FLH5	Cert IV	\$40-60,000	\$20-22
Production manager: Production management responsibilities; has broad industry knowledge & advanced technical skills	FLH7	Diploma	\$60-80,000	\$22-25
Senior production manager /Farm supervisor: Supervises staff, production activities & contributes to business management	FLH8	Diploma	\$80-100,000	\$25-30
Business manager: Sets policy, responsible for successful management of the dairy enterprise	No award	Advanced diploma	\$100-130,000	\$30-40

(a) All Pastoral Award classifications relevant to dairying are shown here: Farm and Livestock Hand, levels 1-8

(b) The training level gives an indication of what to expect for each job classification (and is not a requirement for inclusion in a classification or determining pay rates)

(c) This column gives examples of the range of rates typically seen in the industry (market wage rates rather than the legislated minimum pay rate)

The people on farm

Dairy farming employees earn less than other employees in the region

Source: ABS dairy 2011

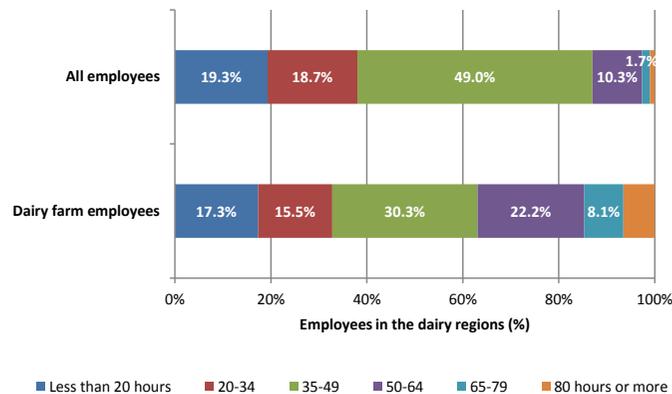
In dairy regions across Australia	All employees ^a	Employees on dairy farms	
	2011	2011	Change since 2006 ^b
Population	1,468,600 people	7,117 people	↑3.7%
Hours worked per week			
Less than 20 hours	19.3%	17.3%	↑ 6 points
20 to 34 hours	18.7%	15.5%	↑26 points
35 to 49 hours	49.0%	30.3%	↓ 4 points
50 to 64 hours	10.3%	22.2%	↓ 1 point
65 to 79 hours	1.7%	8.1%	↓10 points
80 hours or more	1.0%	6.5%	↑35 points
Weekly income			
Less than \$400	17.1%	21.3%	↓85 points
\$400 to \$1000	47.1%	59.3%	↓32 points
\$1000 and above	35.8%	19.4%	↑116 points

(a) Dairy & non-dairy employees

(b) Each point equals 0.1%

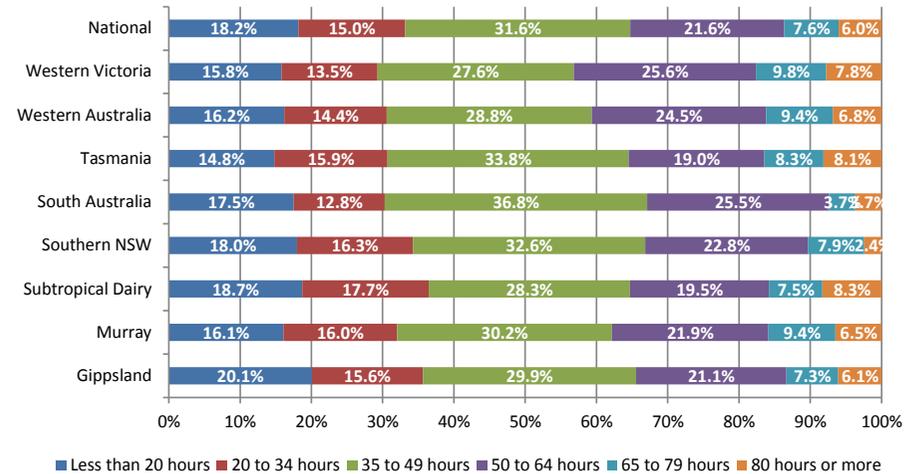
Dairy farm employees work long hours compared to others

Source: ABS dairy 2011 (1,468,600 employees in the dairy regions including 6187 on dairy farms)



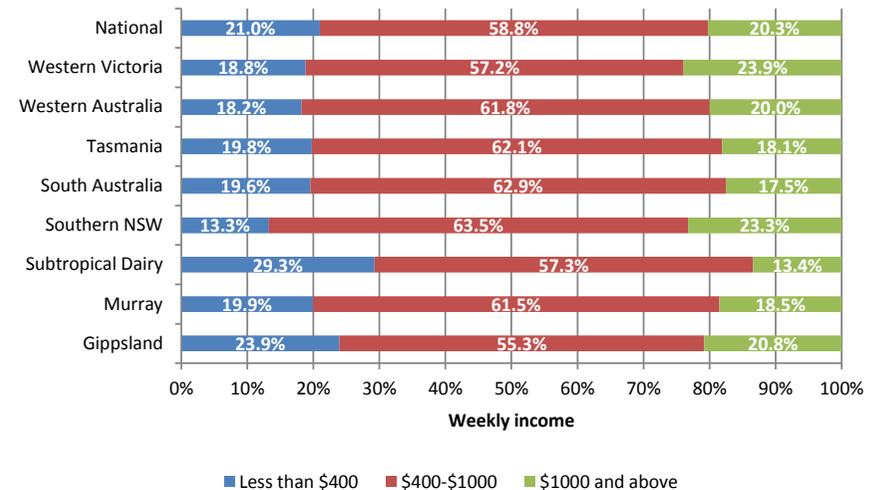
Extended working hours are common across all dairy regions

Source: ABS dairy 2011 (7117 dairy farm employees including 6187 in the dairy regions)



More employees in the Subtropical Dairy earn less than \$400 per week

Source: ABS dairy 2011 (7117 dairy farm employees including 6187 in the dairy regions)



Independent contractors

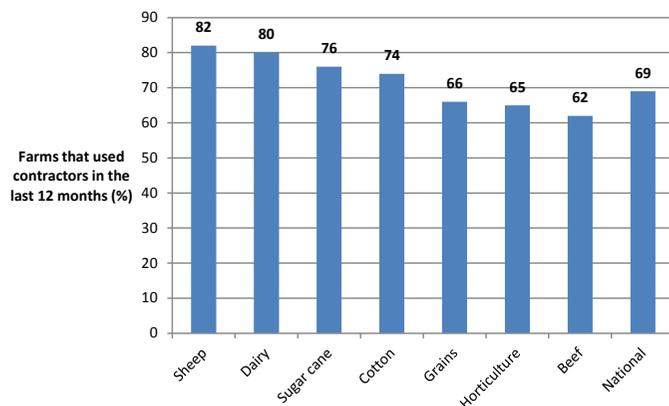
Dairy farmers often engage contractors when they have a specific job which needs to be done by a person with a particular skill, for instance, silage or hay making. There seems to be a high reliance on these contractors but little is known about them or their relationship with the farm business.

There is sometimes confusion about when a person has the status of an employee or as a contractor when they are doing regular work on the farm. Farmers need to be able to distinguish between the two to comply with the industrial relations laws. Calling a person an independent contractor when the true nature of their engagement is an employee does not avoid these laws applying¹⁵⁷.

- A 2011 survey¹⁵⁸ found that 80% of dairy farms had used contractors in the last 12 months, one of the highest levels of any agricultural industry (Lower *et al* 2011¹⁵⁹).

80% of dairy farms had used contractors in 2011

Source: Lower *et al* 2011 (683 farms across Australia including 100 dairy)



¹⁵⁷ Questions that can be asked to help determine whether a person is an independent contractor at common law are at www.thepeopleindairy.org.au, search 'contractor or employee'

¹⁵⁸ This survey studied health and safety on farms with an annual Estimated Value of Agricultural Operations greater than \$40,000 (EVAO is an index used by ABARES since 2004-05 to indicate the extent of agricultural activity of farms based on the 3-year average weighted prices of produce from the farm)

¹⁵⁹ Lower T, Fragar L, Temperley J (2011). Health and safety on Australian farms, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

Training and development

Skills and qualification on farm

People with more skills and better training increase farm productivity and profitability: "they get it right first time, reduce personal and business risk (injury and liability), make smarter decisions, build intellectual capital (knowledge, skills, systems) and build your business for you" (John Weichert¹⁶⁰). Increasingly emphasis is being placed on qualifications for employees, contractors and casual staff to ensure they are suitably skilled when they come onto farms.

- The dairy industry offers a lot of training opportunities to dairy farmers, including accredited courses through the NCDEA (page 81) as well as less formal forms of education (page 73). 'On the job' training was the most common form of training in agricultural sectors in 2012 (Allen Consulting Group 2012¹⁶¹).
- Dairy farmers value skills and experience yet only a minority in the industry have a systemic approach to skill development for themselves or their employees.

The role of the dairy industry in training

Source: Constructed for the Factfinder

Role of the dairy industry	Why
Training available in dairy-specific skill sets	Be able to demonstrate to OECD countries the standard of dairying in Australia Provide transferrable qualifications for those in industry
Career pathway for people in the industry	Provide job satisfaction (promotes retention of people and skills in the industry)
Workforce development	Ensure manufacturing and farm sectors have the regional workforce they need now and in the future

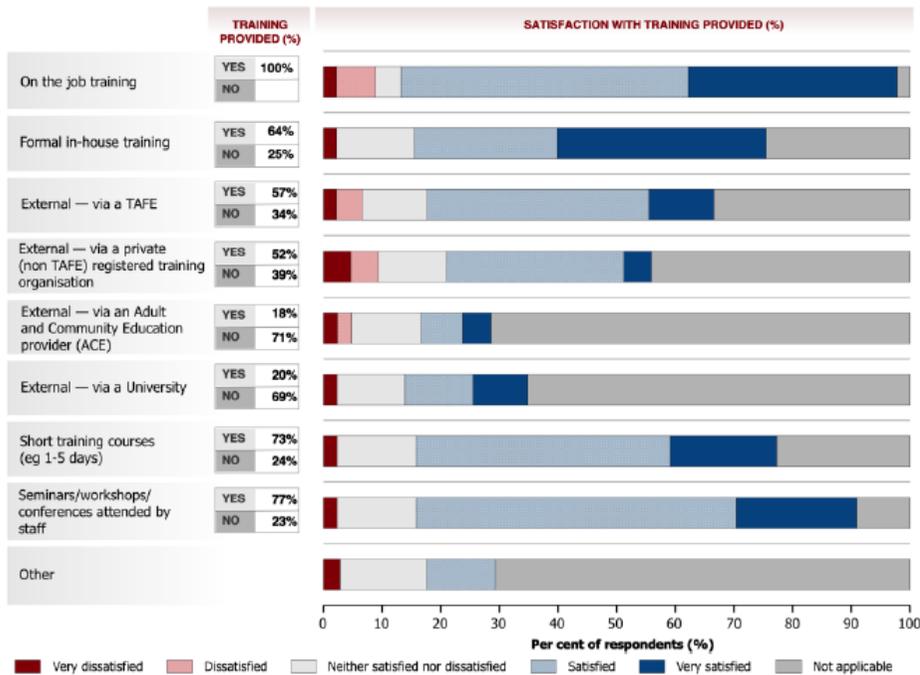
¹⁶⁰ Dairy Moving Forward Committee (2010). Dairy Moving Forward - Research, development and extension priorities for the Australian dairy industry, Melbourne, December

¹⁶¹ Allen Consulting Group (2012). Skills and training needs of the agricultural sector in Hume, Loddon Mallee and South East Metro, Allen Consulting Group, August

The people on farm

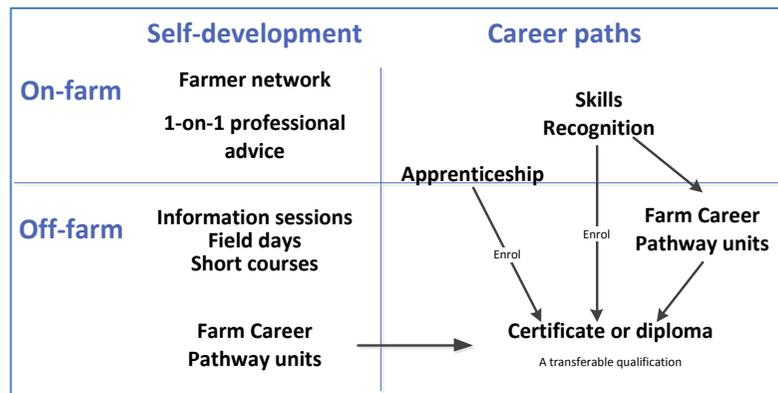
'On the job' training is common in agriculture

Source: Allen Consulting Group 2012 (online survey of 62 agricultural employers in Victoria)
Figure 5.2 Satisfaction with training provided in last 12 months



Pathways to increasing dairy-specific skills and knowledge

Source: Created for this report following discussion with NCDEA



Pre-farmgate Vocational Education and Training (VET)

Advantages of formalizing industry members' learning through the National Training Qualification Framework are that people are assessed against a specified standard, they have a transportable qualification and it attracts external (government) funding to the industry.

- There is a lot of variation in the level of academic attainment of the people who work on farms. Unlike many other careers, the dairy industry does not have a qualification-based entry requirement. Farmers value experience and practical skills and tend to look for these when advertising new positions (Chris Hibbert personal communication, Allen Consulting Group 2012¹⁶²).
- The level of formal qualification of people managing and working in the agricultural sector was substantially less than others in the community in 2006 (Commonwealth of Australia 2006¹⁶³).
- One-third (34.9 %) of the people working on dairy farms have post-schooling qualifications, up from 29.5% in 2006 (ABS dairy 2006 & 2011). This is in line with increases across the Australian population more broadly.
- Growth in post-school qualifications between 2006 and 2011 occurred largely at the Certificate III and degree level (ABS dairy 2006 & 2011).
- Southern NSW and the Victorian dairy regions have the highest levels of post-schooling qualifications, with about one in five dairy farming workers completing Certificates III/IV (ABS dairy 2011).
- Despite having the second lowest proportion of workers with post-schooling qualifications (of 31.1%), WA has the highest proportion of workers with bachelor and higher qualifications (8.0%) (ABS dairy 2011).
- In 2006 (when this question was last asked), 86% of dairy farmers were generally satisfied with the skills of their employees (NDFS 2006).

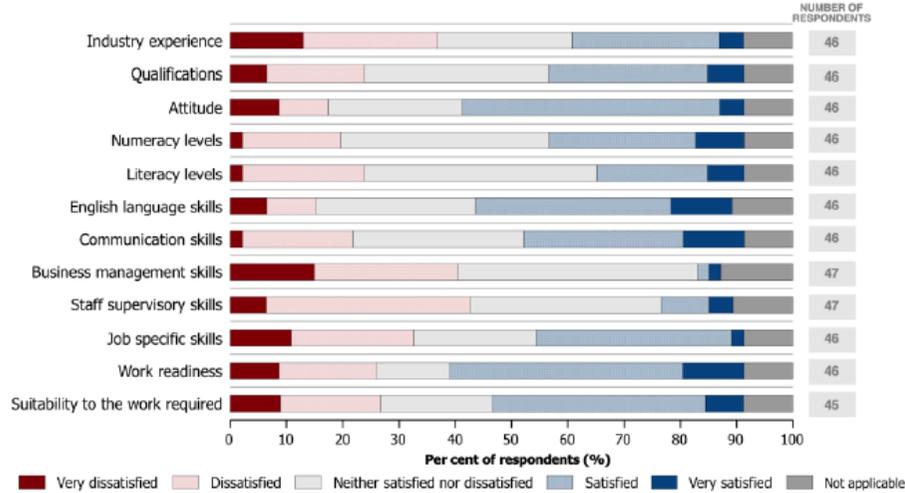
¹⁶² Allen Consulting Group (2012). Skills and training needs of the agricultural sector in Hume, Loddon Mallee and South East Metro, Allen Consulting Group, August

¹⁶³ Commonwealth of Australia (2006). Skills: Rural Australia's Need, Inquiry into rural skills training and research, House of Representatives, Standing Committee on Agriculture, Fisheries and Forestry, Canberra, February

The people on farm

Attitude & work readiness are highly valued by employers in agriculture

Source: Allen Consulting Group 2012 (online survey of 62 agricultural employers in Victoria)
Figure 4.2 Views of job applicants



35% of the people on farm have post-school qualifications

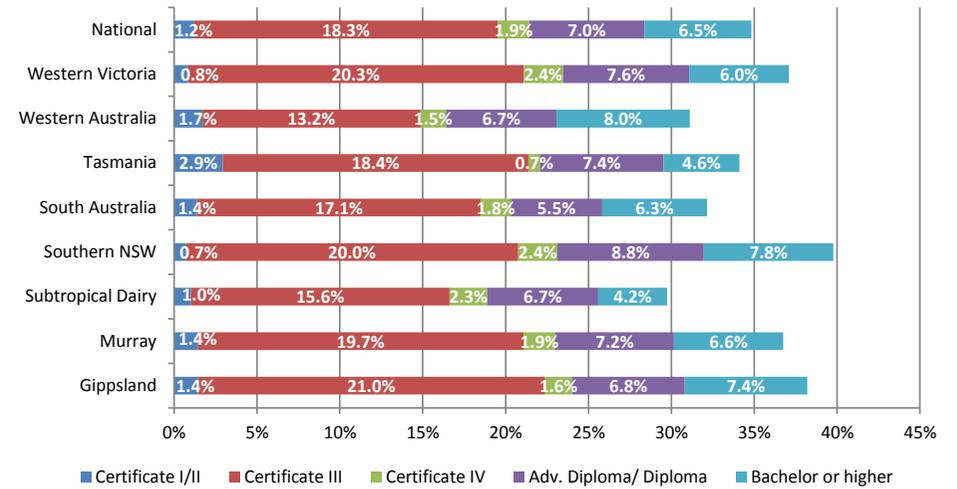
Sources: ABS dairy 2006 (21,998 people) & 2011 (18,728 people)

Across Australia ^a	2011	Change since 2006
Education level		
Certificate I or II	1.2%	Same
Certificate III	18.3%	↑ 19 points
Certificate IV	1.9%	↑ 6 points
Diplomas	7.0%	↑ 11 points
Degrees	6.5%	↑ 18 points
Currently attending...		
TAFE	2.1%	↑ 4 points
University	1.1%	↑ 2 points

(a) This includes owner-managers, employees and contributing family workers as they are not differentiated in the ABS dairy spreadsheet
(b) Each point equals 0.1%

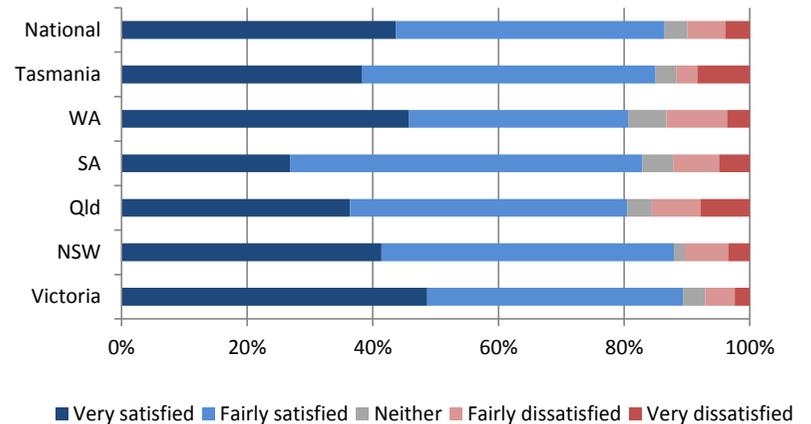
Southern NSW and the Victorian dairy regions have the highest levels of qualification

Sources: ABS dairy 2011 (18,728 people)



In 2006 86% of farmers were satisfied with the skills of their employees

Source: NDFS 2006 (740 of the 1343 survey farms that employed people)



The people on farm

Farm Career Pathway

In the past up-and-coming young farmers commonly learnt the skills and practice of dairying from their family. The need for alternative pathways to attract and develop suitably skilled and committed people has increased over the past decade as farms increasingly outsource capability (38% of the people working on farm are employees) and the workforce is much more dynamic (see page 58).

- In 2006 the components of what is required to work on and manage farms was agreed by the NCDEA Industry Education Steering Committee. These educational units comprise the Farm Career Pathway.
- Units in the Farm Career Pathway have been mapped against the Australian Qualification Framework¹⁶⁴. The dairy industry has added standards above and beyond the National Training Package, usually specifying practical on-farm experience as a prerequisite for qualification.
- These competency-based qualifications have recently been aligned with likely job categories in the federal Pastoral Award 2010.

Dairy-specific NCDEA courses

Source: John Weichert, NCDEA¹⁶⁵

Course title	Likely job category ^a	Time to complete
Certificate II in Agriculture	Assistant Farmhand (FLH1)	Within a year
Certificate III in Agriculture	Farmhand (FLH3)	2 years
Certificate IV in Agriculture	Senior Farmhand (FLH5)	12 months part-time ^b
Diploma of Agriculture	Production Manager (FLH7) Senior Production Manager (FLH8)	1-2 years
Advanced Diploma of Agriculture	Business Manager (non-award)	

(a) The Farm and Livestock Hand (FLH) refer to classifications in the 2010 Pastoral Award

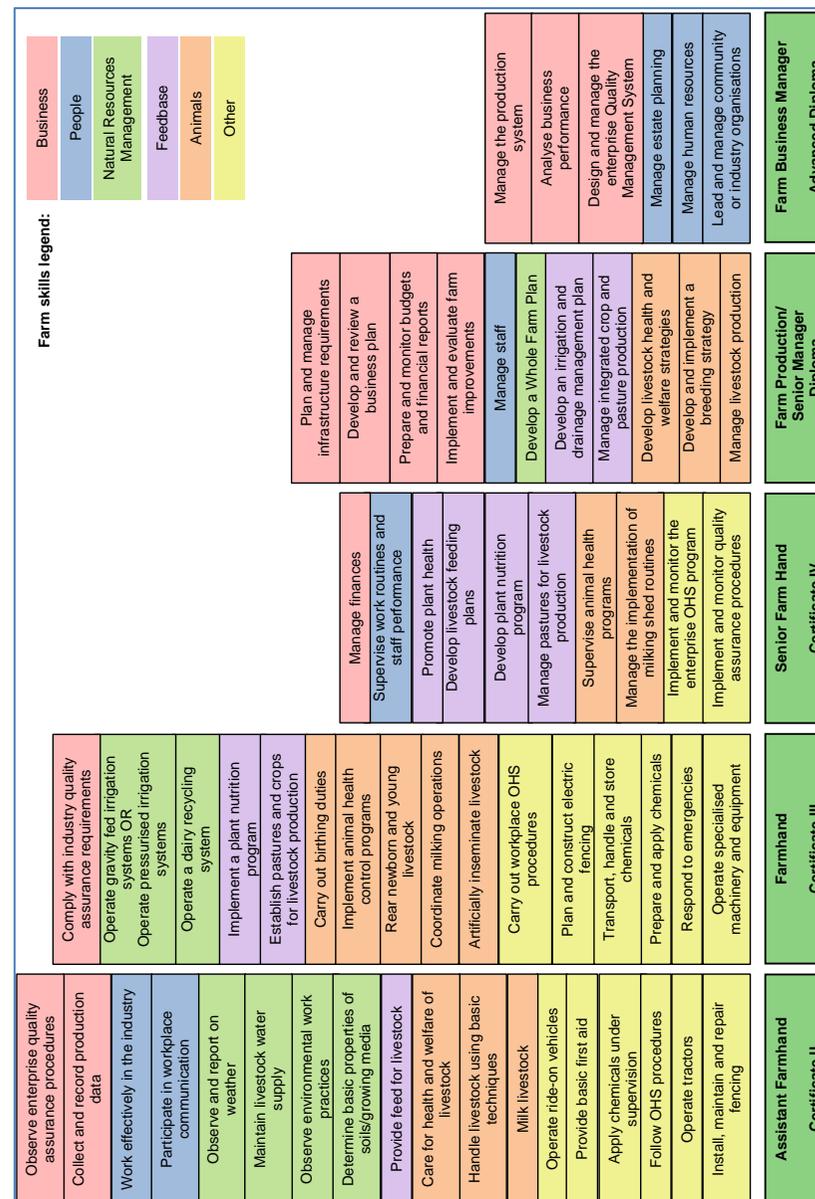
(b) Following a Cert III

¹⁶⁴ The Australian Qualifications Framework (AQF) was introduced in 1995 to promote relevant and nationally consistent qualification outcomes that help people move in the labour market, support lifelong learning of individuals and enable alignment with international qualification frameworks. Each state and territory has legislative responsibility for authorising issue of qualifications in the senior secondary schools, vocational education and training and higher education sectors.

¹⁶⁵ www.ncdea.edu.au

The Farm Career Pathway is an industry-agreed list of what's needed to run a productive and profitable dairy farm

Source: NCDEA 2011



The people on farm

Dairy-specific training (through the NCDEA)

There are currently two main drivers for training in the industry: to ensure the people (employees, contractors and casual staff) who come onto the farm are suitably skilled; and to formalise the expertise of people in the industry to prove it is operating at a standard alongside other OECD countries (Dairy Moving Forward Committee 2010¹⁶⁶).

Dairy's commitment to investing in vocational training has been made on the premise that a higher level of qualification increases the capacity of the industry to be more productive and effective. This is consistent with economic modelling that quantifies benefits of reforms that increase labour force participation and productivity (KPMG 2010).

- The National Centre for Dairy Education Australia¹⁶⁷ was established in 2005 to increase the participation, relevance and capacity of the Vocational Education and Training System by delivering training to dairy farmers nationally through an alliance of Registered Training Organisations¹⁶⁸.
- The extent of training of dairy farm workers through RTOs nationally is not known as the funding and reporting of courses are made on a state-by-state basis and there is no industry-specific national data available to describe this. Even within the NCDEA, not all partners are able to provide a standard set of statistics on participation (ie demographic, enrolments, units, completion) (NCDEA 2013¹⁶⁹).
- In a survey of 100 farmers, 31% said they had undertaken TAFE training themselves or had staff involved in formal training (Sparks 2013¹⁷⁰). Those farmers who had been involved in training were more positive about its ability to deliver efficiencies on farm.
- Agricultural employers in general perceive training as positive for their employees, although the training options and government subsidies are not always known (Allen Consulting Group 2012¹⁷¹).

¹⁶⁶ Dairy Moving Forward Committee (2010). *Dairy Moving Forward - Research, development and extension priorities for the Australian dairy industry*, Melbourne, December

¹⁶⁷ NCDEA is an initiative of Dairy Australia and Goulburn Ovens Institute of TAFE

¹⁶⁸ Partners in the NCDEA alliance for pre-farmgate VET are: Goulburn Ovens Institute of TAFE, East Gippsland TAFE, Dairy Australia (Vic); TAFE NSW Riverina, Illawarra and North Coast Institutes (NSW); The Skills Institute (Tas); tafeSA (SA); Great Southern Institute of Technology (WA); Southern Queensland Institute of TAFE, Australian Agriculture College Corporation (Qld)

¹⁶⁹ NCDEA (2013). *NCDEA program report*, Prepared by Coutts J & R for the National Centre for Dairy Education Australia, July

¹⁷⁰ Sparks M (2013). *Review of the National Centre for Dairy Education Australia: a view from farmers*, Intuitive Rural, July

¹⁷¹ Allen Consulting Group (2012). *Skills and training needs of the agricultural sector in Hume, Loddon Mallee and South East Metro*, Allen Consulting Group, August

- The number of individuals engaging in dairy-specific accredited training through NCDEA and the amount of training they did increased steadily between 2006 and 2010 (GoTAFE 2010¹⁷²). This trend appears to have continued – although the published data for 2012 does not differentiate between pre-farmgate and post-farmgate data (NCDEA 2013).
- In 2010, 1323 GoTAFE clients were enrolled in 2474 pre-farmgate NCDEA units for 410,000 student contact hours (GoTAFE 2010).
- In 2012, 1833 clients of (all but two) NCDEA alliance partners were enrolled in 6555 pre & post farmgate NCDEA units for 628,407 student contact hours (NCDEA 2013).
- Interest was high in people and animal-related units in the Farm Career Pathway in 2010, while only 2% of units undertaken were around farm business management (GoTAFE 2010). Comparable information was not available for 2012.
- 18% of GoTAFE students enrolled in NCDEA units in 2012 were studying (full or part-time) for a full qualification (NCDEA 2013).
- A 2012 survey of 62 employers on farms in Victoria (of which 26% were dairy) believed business management and staff supervisory skills were of growing importance as farms moved from family to other ownership structures (Allen Consulting Group 2012).
- Farm owners and managers who have been in the job for years can enter certification through 'Skills Recognition'¹⁷³. Skills Recognition is regarded as an important tool to introduce farmers to the VET culture as they typically enrol as Cert III and Cert IV then move on (John Weichert personal communication).
- The Skills Recognition pathway increased from 11% of student enrolments in 2008 to 17% in 2010 (GoTAFE 2010). 8% of students enrolling with the Alliance partners in 2012 had Recognition of Prior Learning (NCDEA 2013).
- Over 80% of the investment in NCDEA training in 2011 came from state governments (NCDEA 2013). Changes to government funding models are putting pressure on the NCDEA Alliance partners and it is unlikely that they will be able to maintain capacity and the current level of dairy training without a significant growth in enrolments.

¹⁷² GoTAFE enrolment and participation data in this section was from John Weichert, General Manager NCDEA in 2011. It shows trends in accredited training and relates to dairy-specific training in Victoria with the exception of East Gippsland.

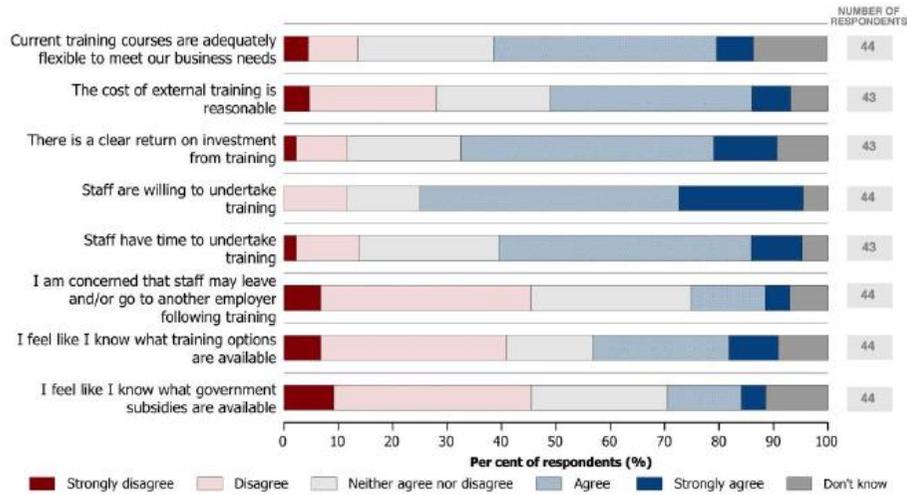
¹⁷³ Skills Recognition involves self-assessment, collation of evidence to demonstrate competency and identification of any training gaps

The people on farm

Not all employers are aware of the training options available

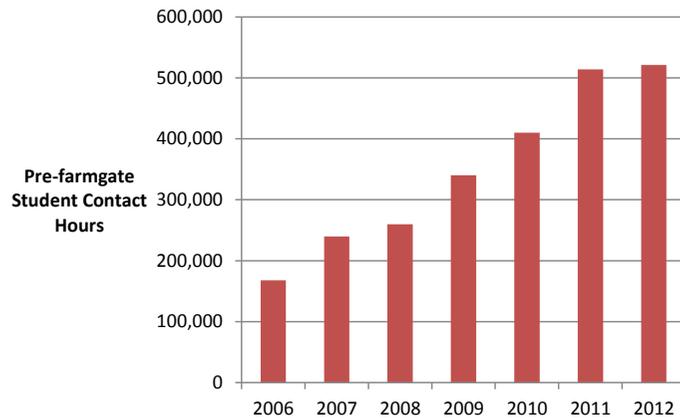
Source: Allen Consulting Group 2012¹⁷⁴ (online survey of 62 agricultural employers in Victoria)

Figure 5.1 Employer views of training provision



Participation in pre-farm gate VET increased between 2006 & 2012

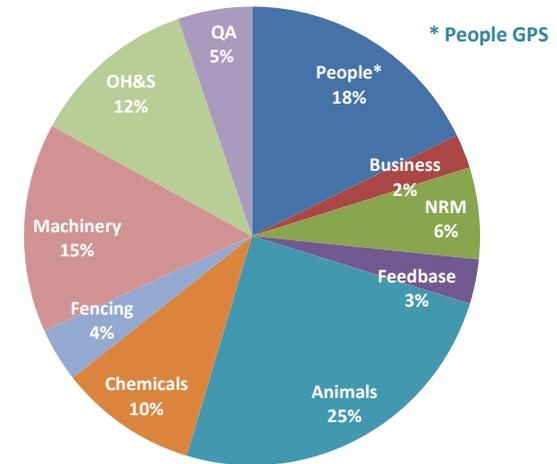
Source: GoTAFE (2006-2010 data), NCDEA 2013 (the 2012 figure imputed as 78% of all student contact hours, which is average pre-farmgate proportion 2006-2010)



¹⁷⁴ Allen Consulting Group (2012). Skills and training needs of the agricultural sector in Hume, Loddon Mallee and South East Metro, Allen Consulting Group, August

Popular units in 2010 were those relating to animals and people

Source: GoTAFE (2474 units undertaken by GoTAFE students in 2010, excluding East Gippsland)



Traineeships

The data around traineeships is sketchy. The primary concern is whether or not there are sufficient trainees in the system to sustain the industry.

- The first traineeships in dairy were offered in 1977 (John Weichert personal communication).
- Based on figures imputed from the 2012 National Dairy Farmer Survey there could be 1,000 dairy trainees nationally (NDFS 2012), although it's not certain from the way the question was asked whether all these were enrolled in VET training.
- 11% of dairy farms in 2012 had trainees, and about half of the trainees are in their first year (NDFS 2011 & 2012).
- Most trainees were taken on by medium and large herds, ie those with 150-500 cows in the milking herd (NDFS 2011).

It's estimated that 1 in every 10 farms has a trainee

Source: NDFS 2010-2012 (~1000 farms each year)

	2010	2011	2012
Farms with trainees	8% farms	11% farms	11% farms
Total trainees (imputed)^{a,b}	704 trainees	1,024 trainees	1,003 trainees
Trainees in their first year (%)^b	Not available	50% trainees	57% trainees

*(a) Percent of farms with trainees * Average trainees per farm * Number of farms (from ADIF with Victoria split into regions based on herds in the Countdown Milk Quality Awards)*

(b) Use with caution as based on small numbers of survey farms with trainees in the region

Workplace Health & Safety

People on farm often work long days through some very busy periods, face a wide range of weather conditions and are required to handle large animals and work with potentially hazardous equipment, environments and substances.

- The rate of death and serious injury for those working, living or visiting farms is higher than other industries. An analysis of closed coronial cases¹⁷⁵ for the period 2003 to 2006 found 52% of the 326 non-intentional deaths due to injury on farms in Australia (not only dairy) were work-related and 48% weren't (Herde & Lower 2011¹⁷⁶). 40% of people were aged over 55 and 17% were children under 15.

Work-related death & injury

Go to Workplace safety management on page 22 for information on the cost of work-related injury and benchmark information about what is being done on farm businesses to provide a safe and healthy workplace for employees, contractors, family, visitors and members of the public.

- The dairy industry's understanding of work-related deaths and injuries on farms relies on sporadic research that usually draw on workers' compensation claims, death notifications, media monitoring and one-off surveys. The published estimates are often not contemporary and almost certainly under-reported.
- Agriculture has the highest rate of employee fatalities of any industry in Australia. At 15.65 deaths per 100,000 employees, the fatality rate in agriculture¹⁷⁷ was eight times the national rate in FY10-11 (Safe Work 2012).
- 28% of the 220 workers who died across Australia in FY10-11 were employed in 'Agriculture, Forestry & Fisheries', 19% in 'Transport, postal & warehousing' and 18% in the 'Construction' industry (Safe Work 2012¹⁷⁸). These three industries accounted for 60% of all employee fatalities between 2003 and 2011.
- There were on average 2 work-related deaths reported on dairy farms a year in the nine years from 1994 to 2003 (Morton *et al* 2007). Common causes of death were most related to use of tractors and other vehicles particularly quad bikes, as well as being struck by cattle and electrocution.

¹⁷⁵ Coronial cases remain "open" until the coroner hands down a final determination on each case. 2007-2010 data were not used in the study as less than 90% of cases were closed (this condition being one of the inclusion criteria).

¹⁷⁶ Herde E, Lower T (2011). Farm injury related deaths in Australia 2003-2006, Australian Centre for Agricultural Health and Safety, Moree, January

¹⁷⁷ Note agriculture is a subset of 'Agriculture, forestry & fishing' and the fatality rate across the whole industry was 17.64 deaths per 100,000 workers

¹⁷⁸ Safe Work Australia (2012). Work-related traumatic injury fatalities, Australia 2010-11, Canberra, December

The people on farm

- The counts of work-related deaths do not include people who die while commuting to or from work or bystanders killed as a result of someone else's work. And these numbers are not trivial: in FY10–11 220 people died of work-related deaths across Australia and another 154 died while commuting (110) or as bystanders (44) (Safe Work Australia 2013¹⁷⁹).
- Workers' compensation claims are the most constant source of information of work-related injury but do not include injury to owner-operators (about 50% of the people that work on farm as per page 67) or their family as this insurance is only required for employees.
- Furthermore 83% of employees in the agricultural sector in FY09-10 who were eligible for compensation did not lodge a claim (ABS 2011¹⁸⁰). The most common reason people gave for not applying for workers' compensation across all industries was that they thought the injury was too minor.
- Agricultural industries have higher levels of workers' compensation claims than other industries (Safe Work Australia 2013¹⁸¹). Dairy cattle farming had the lowest incidence rate of serious workers' compensation claims¹⁸² in the 'Agriculture, Forestry & Fisheries' in FY10-11, at a rate of 12.3 serious claims per 1,000 employees¹⁸³.
- The rate of injury on dairy farms was lower than many other primary industries in FY10-11 (Safe Work Australia 2013). 6% of the workers' compensation claims in 'Agriculture, Forestry & Fisheries' are from dairy cattle farming although the dairy sector has about 8% of employees in this industry.
- Injuries on dairy farms are best assessed from direct surveys of farmers. As well as providing more exact measures of the number of people affected and the number and duration of events (numerators), farmer surveys can be used to establish the total number of people on the farm and the time they spend on farm (better measures for the denominator). The crude measures currently used mean comparisons of rates with other industries can only be ballpark.
- In the 2011 National Dairy Farmer Survey 1 in 7 farmers reported an injury occurring on farm in the previous 12 months (Dairy S&O 2011).

- 26 days was lost on average per injury on dairy farms (NDFS 2011), a figure consistent with the 'Agriculture, Forestry & Fisheries' sector more generally (Safe Work Australia 2013). The number of days not worked reported by farmers in the 2011 survey ranged from 1 to 200.
- In 2004, 40 farmers from a survey of 301 dairy farms in Australia reported an injury in the previous 12 months to themselves or their staff. 22 injuries were significant enough to miss milking and 17 led to up to one week or more off work (Victorian Farm Safety Centre¹⁸⁴).
- Between 2001 and 2003, 24% of workers' compensation injuries in the dairy industry were inflicted by cattle, with injuries typically being fractures or sprains and strains usually of the upper limbs (Morton *et al* 2007¹⁸⁵). 15% of injuries in the dairy industry were due to motorcycles, quad bikes and tractors. And 13% were due to falls, trips and slips in the indoor and outdoor work environment.
- Between 1999 and 2004, injuries in and around the dairy were cow-related (20%), being struck by objects (20%), scalds and burns (17%), and trips and falls (14%) (Victorian Farm Safety Centre¹⁸⁶). They caused a range of injuries, particularly to the hands and fingers, eyes, legs and back.
- For each 100 farms, 27 people suffer from chronic back injury (Victorian Farm Safety Centre).
- Noise on farm can cause hearing loss and tinnitus in farmers and farm workers (Morton *et al* 2007). The noise levels at the operator's ear of dairy plant and equipment is not published and there is consequently no information on recommended exposure without hearing protection.
- Everyone conducting a business now has an obligation under Work Health & Safety Regulations to manage the risks of hearing loss associated with noise at the workplace. This includes ensuring that workers are not exposed to noise that exceeds the exposure standard and providing audiometric testing for workers who are frequently required to use personal hearing protectors. Audiometric tests must be conducted within three months of the commencement of work and follow-up tests must be carried out at least every two years. These should be undertaken well into the work shift so that any temporary hearing loss can be picked up.

¹⁷⁹ Safe Work Australia (2013). *Key Work Health and Safety Statistics, Australia, Canberra*

¹⁸⁰ ABS (2011). *Work-related injuries, Australia 2009-10, ABS Catalogue 6324.0, Canberra, November*

¹⁸¹ Safe Work Australia (2013). *Compendium of workers' compensation statistics Australia 2010-11, Canberra, March*

¹⁸² Serious claims are "all accepted workers' compensation claims (excluding journey claims) that resulted in a fatality, permanent incapacity or temporary incapacity with an absence from work of 1 working week or more"

¹⁸³ Note the provisional figure for FY10-11 presented in the compendium was lower than the a time series of incidence rates in a Work Safe spreadsheet updated 18/9/2013

¹⁸⁴ From the National Milk Harvesting Centre Industry Performance Survey 2004, unpublished

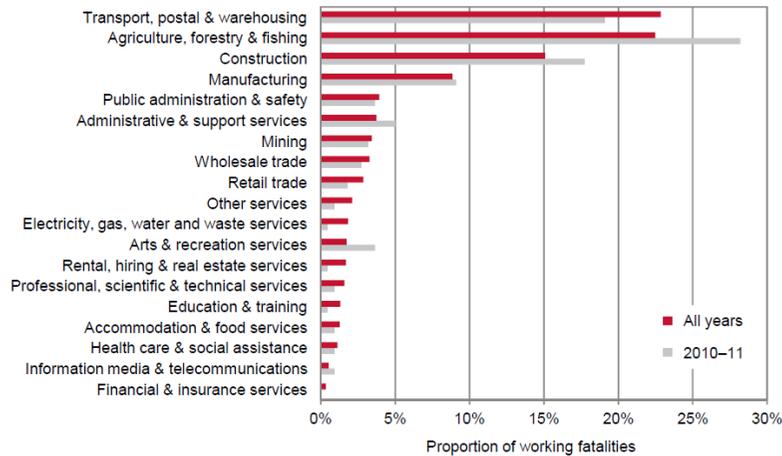
¹⁸⁵ From the National Occupational Health & Safety Commission (NOHSC) online statistics, retrieved from the NOS12 database June 2005. The summary excludes absences less than 1 week and commuting claims.

¹⁸⁶ The data presented here was from the Victorian Injury Surveillance and Applied Research System data on injuries that occurred on dairy farms for the six year period July 1999 to June 2004

The people on farm

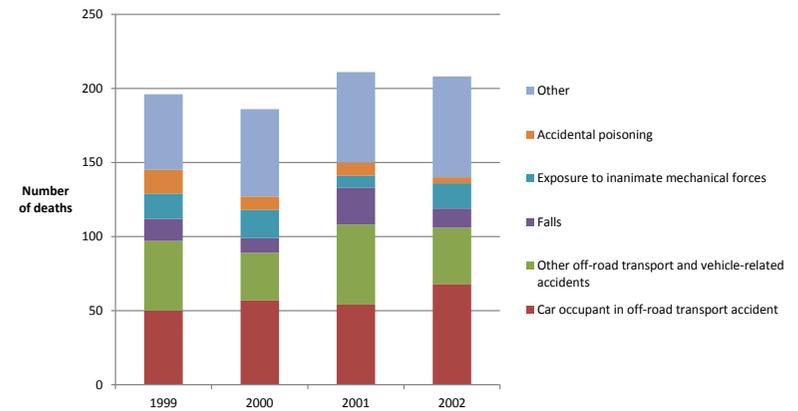
In 2011 'Agriculture, Forestry & Fisheries' had a higher fatality rate of employees than any other industry

Source: Safe Work Australia 2012¹⁸⁷ (all notified fatalities of employees): Figure 17 Participation and rating of activities 2010-11



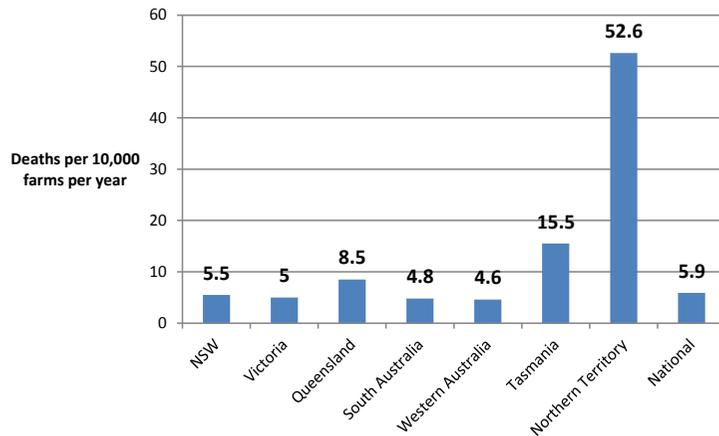
Half the unintentional deaths of farm workers are vehicle-related

Source: Adapted from Morton et al 2007¹⁸⁹ (deaths in agricultural industries 1999-2002 excluding children and contractors, and road traffic deaths)



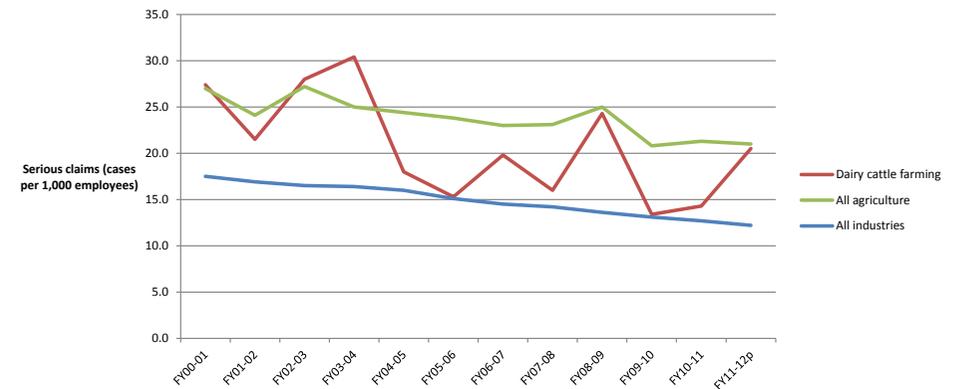
Deaths per farm establishments was highest in the Northern Territory

Source: Herde and Lower 2011¹⁸⁸



There is a downward trend in serious claims in 'Agriculture, Forestry & Fisheries'

Sources: Safe Work Australia 2013¹⁹⁰ (worker's compensation claims)



¹⁸⁷ Safe Work Australia (2012). Work-related traumatic injury fatalities, Australia 2010-11, Canberra, December

¹⁸⁸ Herde E, Lower T (2011). Farm injury related deaths in Australia 2003-2006, Australian Centre for Agricultural Health and Safety, Moree, January (all agricultural enterprises, work-related and not)

¹⁸⁹ Morton et al 2007 sourced from the National Farm Injury Database (2003) ABS Mortality Data, HOIST NSW Health
¹⁹⁰ Safe Work Australia (2013). Compendium of workers' compensation statistics Australia 2010-11, Canberra, March

The people on farm

Dairy farming had the lowest rate of workers' compensation claims in 'Agriculture, Forestry & Fisheries'

Sources: (1) Safe Work Australia 2012¹⁹¹; (2) Safe Work Australia 2013¹⁹² (worker's compensation claims)

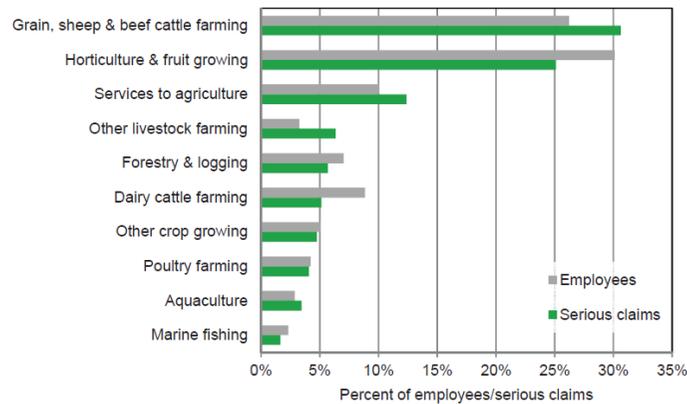
Provisional figures for FY10-11	All industries ¹	Agriculture, Forestry & Fisheries	Agriculture	Dairy cattle farming
Worker fatalities ^{1a}	220 deaths	62 deaths	48 deaths	n/a
Fatality rate per 100,000 workers ¹	1.93	17.64	15.65	n/a
Serious worker's compensation claims ^{2b}	127,335 claims	3,675 ² claims	2,790 claims	190 claims
Serious claims per 1,000 workers ²	12.2	21.0 ²	20.5	12.3
Serious claims per million hours worked ²	7.3	10.5 ²	10.0	5.3

(a) There were 374 work-related traumatic injury fatalities in Australia in FY10-11, of which 59% (220) were workers and 41% (154) were commuters or bystanders

(b) Serious claims are "all accepted workers' compensation claims (excluding journey claims) that resulted in a fatality, permanent incapacity or temporary incapacity with an absence from work of 1 working week or more"

Injury rate on dairy farms is lower than many other primary industries

Source: Safe Work Australia 2013 (based on FY10-11 data): Figure 19 Agriculture, forestry & fishing: proportion of employees and serious claims by industry group, 2010-11 provisional

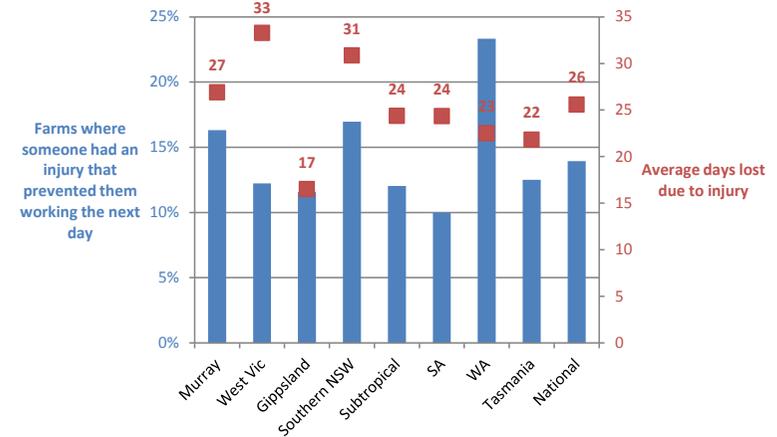


¹⁹¹ Safe Work Australia (2012). Work-related traumatic injury fatalities, Australia 2010-11, Canberra, December

¹⁹² Safe Work Australia (2013). Compendium of workers' compensation statistics Australia 2010-11, Canberra, March

In 2011 there had been a significant injury on about 1 in 7 farms

Source: NDFS 2011 (1005 farms)



Typically half of the injured people lose more than 3 weeks work

Sources: (1) Lower et al 2011¹⁹³ (683 farms across Australia including 100 dairy); (2) NDFS 2011 (1005 farms); (3) Sustainable Farming Families 2012¹⁹⁴ (2327 farming men and women including 561 from dairy); (4) Victorian Farm Safety Centre¹⁹⁵; (5) Safe Work Australia 2013 (131,170 worker's compensation claims of which 3,995 were in Agriculture, Forestry & Fisheries)

Industry	Study type	Year	Work lost due to injury last 12 months	Time lost per injury
Dairy	Farmer survey ¹	2011	9% farms	5 days (mean)
	Farmer survey ²	2011	14% farms	26 days (mean)
	Farmer survey ³	2010 ^a	23% farms ^c	n/a
	Farmer survey ⁴	2004	13% farms ^c	n/a
Agriculture, Forestry & Fisheries	Worker's compensation claims ⁵	2010 ^b	n/a	24 days ^d (median)
All industries	Worker's compensation claims ⁵	2010 ^b	n/a	21 days ^d (median)

(a) 2003-2010 data provided in preliminary form in 2012; (b) FY09-10 data reported in 2013; (c) 'Farm-related' injury – not sure if this is just work-related or includes other injuries occurring on farm; (d) Converted from 'working weeks lost' assuming 5 working days per week

¹⁹³ Lower T, Fragar L, Temperley J (2011). Health and safety on Australian farms, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

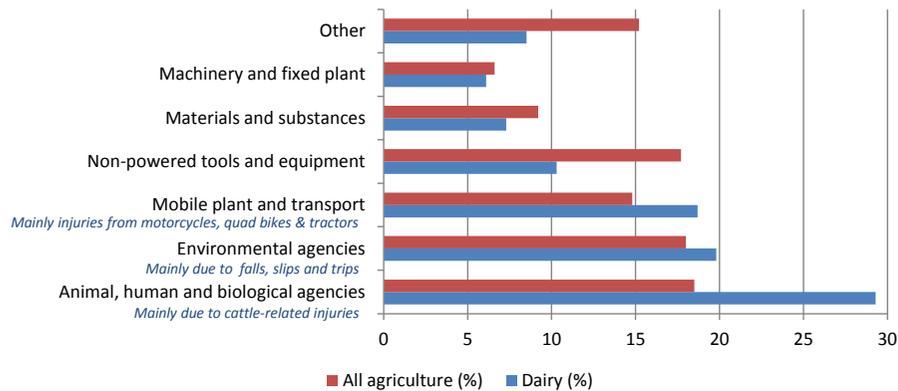
¹⁹⁴ Preliminary data from the National Centre for Farmer Health collected as part of the Sustainable Farming Families Program and provided by Susan Brumby and Ananda Chandrasekara in 2012

¹⁹⁵ From the National Milk Harvesting Centre Industry Performance Survey 2004, unpublished

The people on farm

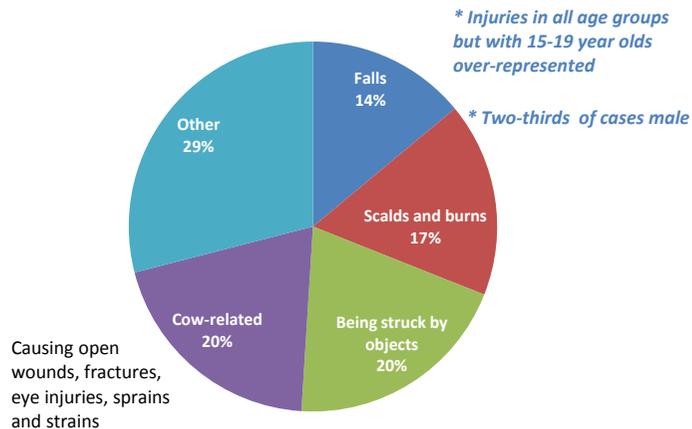
Many compensation claims arise from injury associated with handling cattle

Source: Morton et al 2007 (Workers' compensation claims in the dairy industry 2001-2003)



Major types of injuries sustained in dairies

Source: Victorian Farm Safety Centre from Victorian Injury Surveillance Unit data (emergency treatment of 102 injuries occurring on dairy farms that were treated at 28 Victorian hospitals Jul-99 to Jun-04)



Young people on farms

Children on farms are at higher risk of serious injury than those in cities.

- Dairy has more children below 14 years of age living on the farm than other industries (Lower et al 2011¹⁹⁶).
- Between 2003 and 2006, an average of 13 children (under 15 years of age) were fatally injured on Australian farms each year (Herde and Lower 2011¹⁹⁷) and many more were hospitalized or treated by general practitioners (ACAHS website¹⁹⁸). More than half (56%) of the unintentional deaths were children under 5.
- The major agent associated with child death were bodies of water dams (dams, tanks, swimming pools, creeks etc) and vehicles (including quad bikes and motor cycles) (Herde and Lower 2011). About one-third of all child deaths were visitors to the farm.
- Drowning was the leading cause of death in children under 5 years old (Herde and Lower 2011) despite having halved since the early 90s (ACAHS website).
- Older children figure more prominently for non-fatal injury of children on farms (ACAHS website). Whilst there tend to be more hospital emergency department presentations for 2-wheeled motorbikes, injuries from quad bikes are likely to be more severe or fatal (National Farm Injury Data Centre 2007¹⁹⁹).
- A range of things are done on farm to protect children from hazards such as machinery, dams and chemicals. Children are supervised at all times on 91% of dairy farms, ladders are fixed above child height on 50% of farms and 44% have a securely locked and gated play area (Lower et al 2011).

¹⁹⁶ Lower T, Fragar L, Temperley J (2011). Health and safety on Australian farms, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

¹⁹⁷ Herde E, Lower T (2011). Farm injury related deaths in Australia 2003-2006, Australian Centre for Agricultural Health and Safety, Moree, January

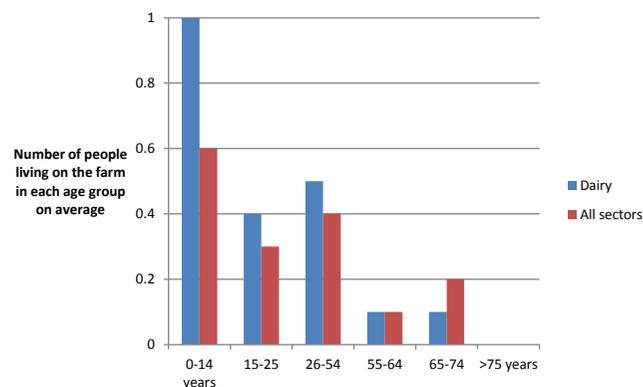
¹⁹⁸ Australian Centre for Agriculture Health and Safety at www.aqhealth.org.au (note information from this website pertains to ALL agricultural industries not just dairy)

¹⁹⁹ From the National Farm Injury Data Centre on on-farm fatalities for 2001-2004

The people on farm

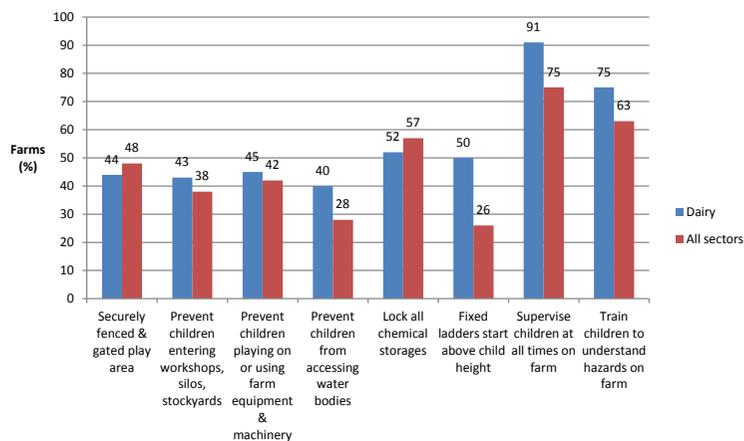
Dairy has more children living on the farm than other industries

Source: Lower et al 2011²⁰⁰ (683 farms across Australia including 100 dairy)



What's done to protect children from hazards (machinery, dams, chemicals etc)

Source: Lower et al 2011 (683 farms across Australia including 100 dairy)



²⁰⁰ Lower T, Fragar L, Temperley J (2011). Health and safety on Australian farms, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

Physical & mental health and well-being

Workplace health and safety on farm is about more than just complying with legal requirements. It's also about farmers actively pursuing health, safety and well-being for themselves, their families and staff, and having ready access to services that are needed to achieve this.

- Australian farmers are at higher risk of physical and mental illness when compared to rural and metropolitan populations (Brumby et al 2011²⁰¹). This is linked to underlying issues of social isolation, stigma, poor access to health services and the prevailing attitudes and beliefs of farming communities.
- Regular checks with General Practitioners increase the chance of early diagnosis and treatment of specific health conditions (many of which occur at a higher incidence in farming populations²⁰²) and support long-term behaviour change through the provision of health and preventative services (Depczynski and Fragar 2009²⁰³ & Jones and Fragar 2008²⁰⁴ cited in Lower et al 2011²⁰⁵).
- Preliminary findings from the Sustainable Farm Families program²⁰⁶ showed: 69% of dairy participants were overweight; 64% had high blood pressure ($\geq 130/85$); 47% had 3 or more risk factors for metabolic syndrome, diabetes or cardiovascular disease; and 38% were experiencing psychological distress.
- Although 78% of dairy farmers had visited their GP within the last 12 months, only 48% said they visit their GP for a check-up at least once a year (Lower et al 2011).
- Two focus groups held as part of the evaluation of the Sustainable Farming Families program believed isolation and being constantly time poor make it "difficult to be healthy when you are farming" (Storey 2009²⁰⁷).

²⁰¹ Brumby S, Chandrasekara A, McCoombe S, Kremer P, Lewandowski P (2011). Farming fit? Dispelling the Australian agrarian myth, BMC Research Notes 2011, 4:89 www.biomedcentral.com

²⁰² The list includes cardiovascular disease, prostate cancer, haemopoietic and lymphatic cancers, skin cancer, colon cancer and rectal cancer

²⁰³ Depczynski J, Fragar L (2009). Australian farmers – a high risk population for rural health, 7th National Farm Health and Safety Conference, Swan Valley, Western Australia

²⁰⁴ Jones S, Fragar L (2008). Community programs to improve cardiovascular health and cancer prevention – a preliminary review of programs in rural Australia, Australian Centre for Agricultural Health and Safety, Moree

²⁰⁵ Lower T, Fragar L, Temperley J (2011). Health and safety on Australian farms, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

²⁰⁶ Preliminary data from the National Centre for Farmer Health collected as part of the Sustainable Farming Families Program and provided by Susan Brumby and Ananda Chandrasekara in 2012

²⁰⁷ Storey J (2009). Sustainable Farm Families Impact Evaluation 2000–2009, A report prepared for Department of Primary Industries Victoria by Roberts Evaluation Pty Ltd, October

The people on farm

- A survey of health and safety on Australian farms confirmed the potential for social isolation, showing 21% of dairy farmers had not spent more than 2 hours in the company of friends or colleagues outside the family home for 14 days or more - the highest of any of the seven agricultural sectors studied (Lower *et al* 2011). For 8% of dairy farmers it had been more than one month since they had socialised.
- Regular social interaction helps peoples' mental well-being (Kelly *et al* 2010²⁰⁸ cited in Lower *et al* 2011). 9% of dairy farmers said long working hours had contributed to mental health issues on the farm in the past year in the survey by Lower *et al* 2011. (Note farmers tended to give different answers to the question on mental health the second time it was asked, and different operators on the farm had quite different opinions.)

48% of dairy farmers visit their GP for a check-up at least once a year

Source: Lower *et al* 2011²⁰⁹ (683 farms in 7 agricultural commodities across Australia, including 100 dairy)

Across Australia	Dairy	All sectors ^a
Had a health check with their GP within the last 12 months	78%	77%
How often they see a GP for a check up		
At least once a year	48%	55%
At least once per 2 years	12%	12%
On a needs basis only	40%	32%
Never	0%	1%
Average number of days since last social interaction ^b	19 days	10 days
Days since last social interaction...		
Less than 7 days	66%	73%
7 to 14 days	13%	12%
14 to 30 days	13%	10%
More than 30 days	8%	5%

(a) Grain, dairy, cotton, sugar cane, beef, sheep & horticultural industries

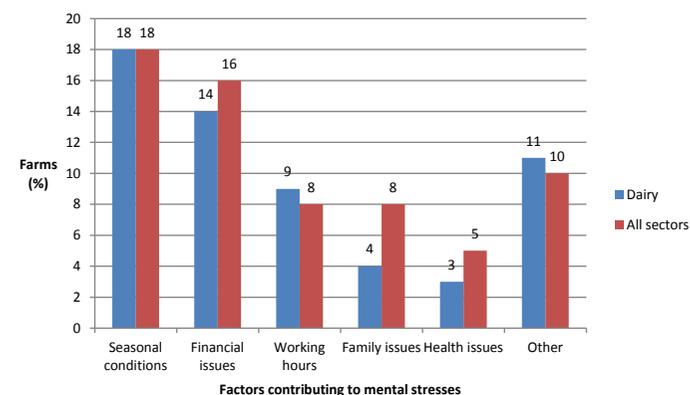
(b) Where a social interaction is defined as more than 2 hours, with friend or colleagues, outside the family home

²⁰⁸ Kelly B, Stain H, Coleman C, Perkins D *et al* (2010). Mental health and well-being within rural communities: The Australian Mental Health Study, *Australian Journal of Rural Health*, 18(1):16-24

²⁰⁹ Lower T, Fragar L, Temperley J (2011). Health and safety on Australian farms, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

Long working hours contributed to mental health issues on farms in the past year

Source: Lower *et al* 2011²¹⁰ (683 farms across Australia including 100 dairy)



Aspects of farming that can make it difficult to be healthy

Source: Storey 2009 (2 focus groups of predominately dairy farmers in Camperdown, Aug 2009)

The women's group (N=7)	The men's group (N=7)
Being time poor ("no time to self or time out")	"You need outlets off the farm, you must leave the farm occasionally"
The men "just get busier and busier" and find it difficult to switch off from work	Time and work load, the difficulty of maintaining balance
Late finishes to their working days	Finances makes prioritizing health difficult ("it's a 7 days a week job", "dairy farming ties you down a lot and you can't really take a day off, you have to get someone in")
"Having a sweet tooth"	"Liking your food too much"
Lack of access to sporting facilities or events as well as difficulty in finding time for these activities	

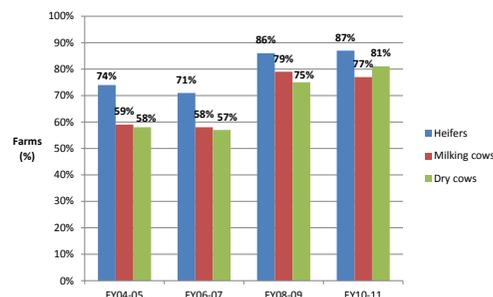
²¹⁰ Lower T, Fragar L, Temperley J (2011). Health and safety on Australian farms, RIRDC publication number 11/001, Rural Industries Research and Development Corporation, Barton

Communicable diseases

- People handling dairy cattle (farmers, vets and abattoir workers) have a higher risk of exposure to the zoonotic²¹¹ diseases leptospirosis and Q Fever. Both infections can cause long periods of lethargy and illness and are notifiable²¹².
- There were 146 notifications of leptospirosis in people in 2009²¹³ (Department of Health and Ageing²¹⁴). Three-quarters of cases were in Queensland. In 2006 4.5% of the cases were in dairy farmers (Symonds 2006²¹⁵).
- Exposure of dairy farmers to leptospirosis is minimised by vaccinating the dairy herd (usually a combined vaccine against serovars *hardjobovis* and *pomona*). 87% of farms vaccinate their dairy heifers each year (Dharma *et al* 2012²¹⁶).
- People can be vaccinated against Q Fever. In 2001 the Commonwealth Government funded the National Q fever Management Program to promote vaccination of abattoir workers, sheep, dairy and beef cattle farmers, their employees and unpaid family members working on farms. Following a peak in 2002, both notification and hospitalisation rates declined to the lowest levels on record in 2005 (Department of Health and Ageing²¹⁷).

87% of farms vaccinate their dairy heifers each year for leptospirosis

Source: Dharma *et al* 2012 (~300 ADIS farms each year)



²¹¹ Zoonoses are diseases naturally transmitted between vertebrate animals (often wildlife) and humans

²¹² Diseases listed as 'Notifiable' are required by law to be reported to enable government authorities to monitor levels and provide early warning of possible outbreaks

²¹³ Note the number of cases is undoubtedly under-reported as notification entails a visit to the doctor followed by diagnostic (usually serological) testing.

²¹⁴ From Department of Health and Ageing website www.health.gov.au: "National Notifiable Diseases Surveillance, Communicable disease surveillance: Preliminary Tables for 2009"

²¹⁵ Symonds M (2006). Leptospirosis Surveillance Report 15, January–December 2006, WHO/FAO/OIE Collaborating Centre for Reference & Research on Leptospirosis, Queensland Health Scientific Services

²¹⁶ Dharma S, Shafron W, Oliver M (2012). Australian dairy Farm technology and management practices 2010–11, ABARES, Canberra, August

²¹⁷ From Department of Health and Ageing website www.health.gov.au on page titled "Vaccine Preventable Diseases and Vaccination Coverage in Australia, 2003 to 2005 "

Access to services

Service providers are all those people (public, private and industry) who interact with dairy farmers to provide them with services and advice. Many different disciplines are represented including: dairy company field officers, department of agriculture staff, dairy industry extension staff, consultants, veterinarians, accountants, bankers and rural financial counsellors.

- Ideally RD&E should work with and use the breadth of advisory services available (both private and public) to meet the different preferences for advice and support in the farming population (Nettle and Waters 2010²¹⁸).
- Following a reduction in government dairy extension in all states, Dairy Australia established a network of regional coordinators (in NSW, Victoria, SA and WA) in 2012-13 as part of their National Farm Change and Extension Strategy. The strategy aims to improve dairy farm performance and profitability by connecting with local farmers and service providers to deliver programs and provide support for discussion groups and networks (Dairy Australia website²¹⁹).
- The public service sector tends to invest in areas important for society where industry and individuals underinvest because of their inability to capture sufficient or exclusive direct benefits (DPI 2010²²⁰). In contrast the private sector is well-placed to provide services that lead to direct enterprise-level profitability outcomes.
- Farmers need to be able to access skilled, local service providers to work through issues and manage risks on farms (Penry *et al* 2009²²¹). Furthermore effective working relationships between the two parties enable priorities to be regularly reviewed and businesses to adapt to new circumstances (Nettle *et al* 2006²²²).
- The population of advisers is very dynamic; with people regularly changing job role, employer and location (Dairy Moving Forward Committee 2010²²³).

²¹⁸ Nettle R, Waters W (2010). Client-centred RD&E: A process and some tools for understanding the changing client to improve RD&E services, Prepared for Dairy Moving Forward Module 3, March

²¹⁹ Dairy Australia website www.dairyaustralia.com.au Search 'Extension team', viewed December 2013

²²⁰ Department of Primary Industries (2010). DPI services to dairy farmers, Discussion draft, Department of Primary Industries and Dairy Australia, State of Victoria, June

²²¹ Penry J, Paine M, Brightling P (2009). Achieving Sustainable Improvement, Enhancing services to dairy farmers through effective partnerships between public and private sectors, A final report to Dairy Australia, Melbourne

²²² Nettle R, Hope A, Thompson A, Smolenaars F, Brightling P (2006). Insight to the dairy industry's capacity to manage mastitis, A final report to Dairy Australia, Melbourne, August

²²³ Dairy Moving Forward Committee (2010). Dairy Moving Forward - Research, development and extension priorities for the Australian dairy industry, Melbourne, December

The people on farm

- Critical gaps that may be opening in the service sector workforce have been described for rural veterinarians and milking machine technicians.
- A review of the veterinary workforce in 2013 concluded that the supply of vets delivering services to livestock does not meet the need for herd health or disease monitoring (Porritt 2013²²⁴). This is despite the prediction that there will be an oversupply of vets in the near future in Australia and consistent with the Frawley Report²²⁵ finding in 2003 that graduate numbers were sufficient but producers were under-utilising veterinary services.
- A study following up a cohort of veterinary graduates from the University of Queensland after 15 years described 61% starting work in mixed practice and 26% being in mixed practice after 5 years (Heath 2007²²⁶).
- The AVA website²²⁷ quotes a recent Graduate Destinations Survey that found 75% of University of Melbourne veterinary graduates entered practice in rural areas in 2007. “The challenge is to retain them in the rural areas. Rural practice can be difficult even for experienced practitioners, and can be extremely demanding for new veterinarians.”
- Australia now has 7 veterinary schools and will be graduating about 1000 veterinarians per year from 2012 (AVA website²²⁸). 2.3% of work time spent by all veterinarians²²⁹ completing the 2012 Veterinary Workforce Survey was in the dairy industry (AVA 2012²³⁰).
- The Animal Performance section of the 2010 Dairy Moving Forward report said the “vacant space” where milking machine technicians should be had been developing for the last few years, with a lack of both professional technicians on farm and an all-time shortage of suitably qualified trainers.

²²⁴ Porritt D (2013). Australian veterinary workforce review report, Prepared by Taverner Research for the Australian Veterinary Association, June

²²⁵ Commonwealth of Australia (2003). Review of rural veterinary services, Prepared for the Australian Government Department of Agriculture, Food and Fisheries by Peter Frawley, Canberra

²²⁶ Heath TJ (2007). Longitudinal study of veterinary students and veterinarians: the first 20 years. Australian Veterinary Journal, 85(7):283-289

²²⁷ Australian Veterinary Association website www.ava.com.au Search for “Rural Veterinary Services” & “Workforce data”, viewed December 2013

²²⁸ Australian Veterinary Association website www.ava.com.au Search for “Rural Veterinary Services”, viewed December 2013

²²⁹ 1,447 of 10,317 registered veterinarians nationally participated in the 2012 Veterinary Workforce Survey, a response rate of 14%

²³⁰ AVA (2013). Australian veterinary workforce survey, Australian Veterinary Association, July

- A situation analysis of the milking machine technician workforce in 2012 found dealerships are under considerable pressure as farm numbers reduce (Windsor and Brightling 2012²³¹). OEMs (Original Equipment Manufacturers) are finding it difficult to engage people who are willing and able to be successful dealer principals.
- Farmer access to technical services is reduced as dealerships go out of business, which has been occurring in all regions and particularly Queensland (Windsor and Brightling 2012). 65% of 314 farmers completing an online questionnaire had experienced a breakdown that had required a technician in the last 12 months and 23% said they’d had difficulty getting technical services when they wanted them.

Achieving Sustainable Improvement research findings^a

Source: Penry et al 2009

The market is ready for management services that makes risk management easier

Practitioners offering a service that adds value to farm management need to have a working understanding of farm systems as well as technical expertise

Providing a service based solely on knowledge was initially disconcerting for the veterinarians

Dairy farmers valued the ‘real time’ management cues (for good udder health in this case)

Ways of boosting the review step are needed to achieve incremental improvement in herd performance

Ways of integrating ‘MAX’^b into provider businesses are needed if the service is to sustain in the private sector

(a) The aim of the ASI research was to identify necessary design elements of a service offered through the private sector (veterinarians) to enable existing technology (messages and resources from an industry program) to be incorporated into routine risk management of farms.

(b) The case study was based on ‘Countdown MAX’, a new service that helped dairy farmers focus on key decisions at a time and in a way that is appropriate to events occurring on the farm. A MAX process involved advisers working with the farm team to assess the situation, develop an agreed strategy, implement it, review the results and re-plan the next set of actions.

²³¹ Windsor K, Brightling P (2012). Workforce planning and action, Service providers – Milking machine technicians, Final report to Dairy Australia for Phase 1 Situation Analysis, December

The people on farm

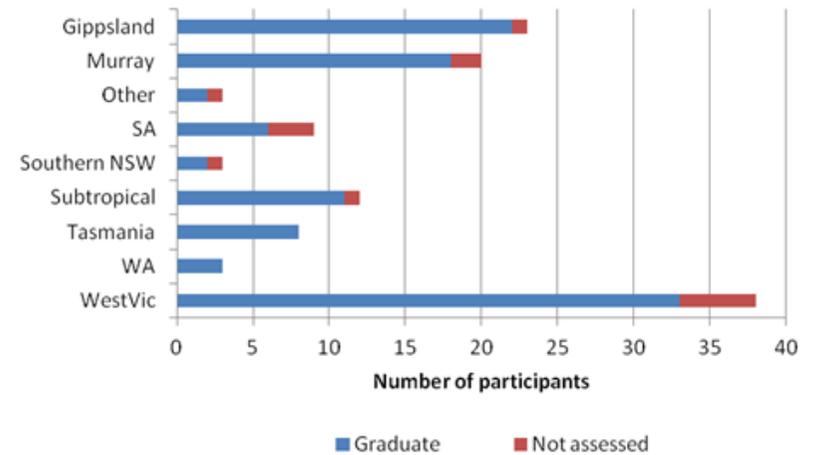
Services with a people focus

In 2007 very few dairy service providers could confidently identify root causes of people issues on farm, know how they might be resolved or who to turn to. Consequently a new diploma-level qualification, the Diploma of Human Resource Management (Dairy)²³², was developed to build the capacity of the sector to influence people issues so farmers would have access to a ready source of high quality advice.

- 119 people (22 farmers and 97 professionals) from across Australia have participated in the new Diploma of Human Resource Management (Dairy) since its pilot in 2008 (NCDEA enrolments). 88% have graduated, and 12% (a third of them farmers) have completed the course but did not submit materials for assessment.
- 51% of the diploma participants were farm consultants and dairy company staff (information from The People in Dairy). Other participants included human resource management trainers from NCDEA and TAFE colleges, farmers with large numbers of staff, and a mix of other service providers.
- All graduates have gone on to use these skills and knowledge in some form in their businesses (The People in Dairy Forum for Diploma participants 2009). About one-third of graduates (including all the farm consultants) now routinely use the learning in interactions with their farming clients.

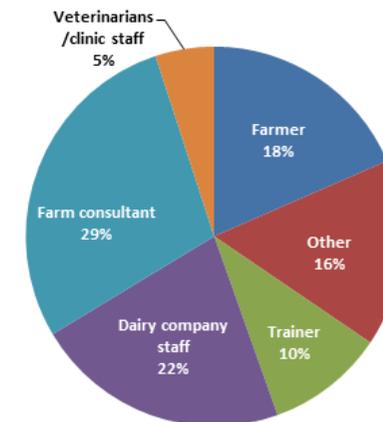
By the end of 2013, 119 people had enrolled in the HRM (Dairy) diploma and 88% had graduated

Source: Dairy Australia's The People in Dairy program



82% of the HRM (Dairy) diploma students were advisers (not farmers)

Source: Dairy Australia's The People in Dairy program



²³² This diploma is run by the NCDEA and Dairy Australia's The People in Dairy program. It provides dairy-specific training for advisers in people management and helps them develop a conceptual framework around people issues on dairy farmers, gain skills and qualification, and establish a community of practice in this area.

The people on farm

Points of interest

- The dairy farming workforce is dominated by owner-managers (50.7%, dropping by 8% since 2006). 51.5% of owner-managers are over the age of 50.
- Dairy farming workers work excessively long hours. 37% of employees and 71% of owner-employers work extended hours of 49 hours per week or more (compared to 17% of the regional Australian population generally) and almost one in three (29%) of owner-managers work 80 hours per week or higher.
- Working long hours is not sustainable for the industry as a whole – but is a valid choice of individuals for wealth creation.
- Dairy farming employees are more likely to be low income earners than their regional counterparts, however the gap has been narrowed since 2006. 17% of employees in the dairy regions earned \$400 per week or less compared to 29% of dairy farming employees.
- Southern NSW and the Victorian dairy regions have the highest levels of post-schooling qualifications, with almost one in five dairy farming workers completing Certificates III/IV.
- The most highly subscribed training courses have a technical orientation (pasture management, nutrition etc).
- Farmers overwhelmingly participate in individual units or skill sets rather than full qualifications. To increase completion rates, they would need to appreciate the benefits of having a systemic approach to training for themselves and their employees.
- The strong self-reliance of the farming population with regard to learning and adoption of new technologies signals the importance of influencing the peer networks as an entry point for services.
- Work Health & Safety issues have a large impact on farm family well-being and business risk.
- As farms get larger and more complex so does the need for more specific (1-on-1) advice. Over the past decade service providers have become a significant delivery arm of industry RD&E. In 2012-13 Dairy Australia started implementing a national strategy to promote effective farm change and extension services.

- (As with farm) Insufficient capacity in the private service sector may be due to problems in retention of suitably qualified people in the industry, not supply.
- The Diploma of Human Resource (Dairy) has provided a community of practice of well-informed, enthusiastic advisers who have the capacity to help farmers manage their people resource.

Information gaps

- More detailed information about employees on farm (such as the proportion working full-time and part-time, the on-farm role and level of decision-making, time in this role, tenure on farm, previous job and role, monetary and non-monetary remuneration, working arrangements of those coming from overseas etc).
- Methods to assess workplace culture.
- Understanding of the extent to which working hours and reported remuneration are related to necessities of “staying afloat” or individual/business wealth creation.
- More clarity around participation in vocational training: NCVER data does not differentiate between those working on dairy farms and other agricultural enterprises.
- Comparing the uptake of traineeships with other sectors (as this reflects how farmers’ value systemic training and formal qualifications).
- A process for tracking changes in Work Health & Safety attitudes and outcomes over time. Collation of WH&S information for older people on farms.
- Options for filling skills gaps: including attitudes towards use of contractors, farm consultants and service providers; strategies to meet growing/changing business requirements; and the extent and nature of employment of overseas workers.
- Ongoing ways of assessing the match between service sector supply and demand in the regions. What is the service provider capacity in the regions? Is there sufficient demand to maintain currency? Do service providers have the skills, capacity and business case to help support dairy farm businesses? Who determines the qualifications and skills that are needed? How do people come into the industry? Why do they exit?

Dairy product manufacturing in Australia

Success in the manufacturing sector relies on its ability to supply and compete in a global market which, in turn, is influenced by the vision and skills of its people

About the manufacturing sector

Information about the manufacturing sector provides context for the manufacturing workforce and the environment that dairy farm businesses operate in. Dairy Australia provides detailed market analyses in its annual Australian Dairy In Focus publication (released every November) and Dairy Situation & Outlook report (released twice a year).

- Dairy is Australia's third largest rural industry and fourth largest agricultural exporter (ADIF 2013, more detail on page 8).
- Australia produces about 2% of the world's milk production (ADIF 2013). There has been a downward trend in the export of both processed and unprocessed dairy products over the past decade and an increase in imports (DAFF 2013).
- 9.20 billion litres of milk was produced in Australia in FY12-13, down 3% on FY11-12 (ADIF 2013).
- Milk production represented 11% of the total value of Australia's farm and fisheries food production in FY11-12 (DAFF 2013²³³).
- 27% of milk produced in Australia was used for drinking milk in FY12-13 and 73% for manufactured products (ADIF 2013).
- The major manufactured product streams are: cheese; skim milk powder, buttermilk powder and butter; drinking milk (fresh and UHT long-life); wholemilk powder; butter and casein; other consumer products (such as yogurts, custards and dairy desserts) and specialised ingredients (such as whey, proteins, nutraceuticals²³⁴) (ADIF 2013).
- Cheese has consistently been the major product stream over the years using about one-third of Australia's raw milk production (ADIF 2013).
- The development of more highly value-added products provides a hedge against returns from commodity manufacturing.

The domestic market

- 60% of the milk produced in Australia in FY12-13 went to the domestic market (ADIF 2013): about 26% as fresh drinking milk and the remainder as manufactured products such as cheese and butter.

²³³ DAFF (2013). *Australian food statistics 2011-12*, Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra

²³⁴ Nutraceuticals are products isolated or purified from foods (in this case dairy) that have been demonstrated to provide health or medical benefits

- About 24% of domestic cheese consumption in FY12-13 was of imported product (ADIF 2013). New Zealand is the major source of imports, providing 60% of Australia's total cheese imports and 90% of butter imports in 2013.

Export markets

- 40% of all milk produced in Australia in FY12-13 was exported (ADIF 2013). Valued at \$2.76 billion, this represents 7% of the world dairy trade behind New Zealand, the European Union as a bloc and the United States.
- Asia accounts for 73 % of Australia's dairy export market (ADIF 2013).
- Operating in international markets brings its own range of complexities and challenges (Tee *et al* 2010). The export market is vulnerable to external factors such as volatile exchange rates, interest rates, world supply, the strength of economies of the importing markets and consumer demand for dairy product. Increasing numbers of farmers will be exposed to this market volatility if the export market grows and dairy manufacturing companies become foreign-owned.
- Competition for supply is of particular importance to the Victorian dairy industry given that the majority of milk produced in this state is exported as manufactured dairy products (Tee *et al* 2010²³⁵).

The companies

- Dairy manufacturing is co-located with farming and is most heavily concentrated in Victoria.
- There has been significant consolidation and restructuring within the manufacturing industry during the past decade with the acquisition of brands and infrastructure to allow for optimisation of operations (ADIF 2007-2013, company websites).
- Thriving local dairy companies are often a mainstay of their community. For example Bega is the largest employer on the far south coast of NSW and Warrnambool Cheese and Butter is a significant employer in southwest Victoria. This has flow-on effects such as increases in the value of land and real estate in the local area.

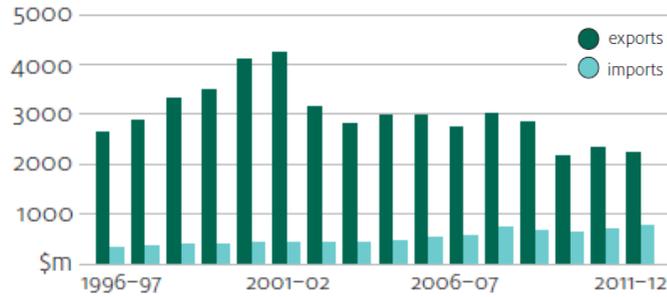
²³⁵ Tee E, Hood V, Tostovrsnik N, Medhurst A (2010). *Dairy Industry Environmental Scan, A Business Case for Farm Services*, Department of Primary Industries Victoria, Melbourne, 2010

Dairy product manufacturing in Australia

Description of the dairy manufacturing companies can be obtained from Dairy Australia's annual publications of Australian Dairy In Focus and the Dairy Situation & Outlook.

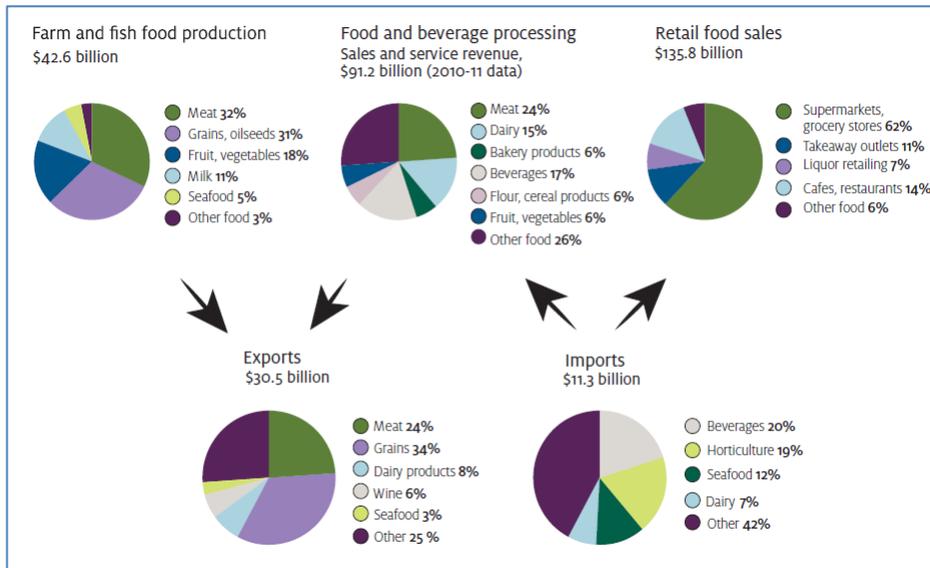
There has been a downward trend in dairy product exports since 2001

Source: DAFF 2013²³⁶: Figure 22 Australian food exports and imports, 2011-12



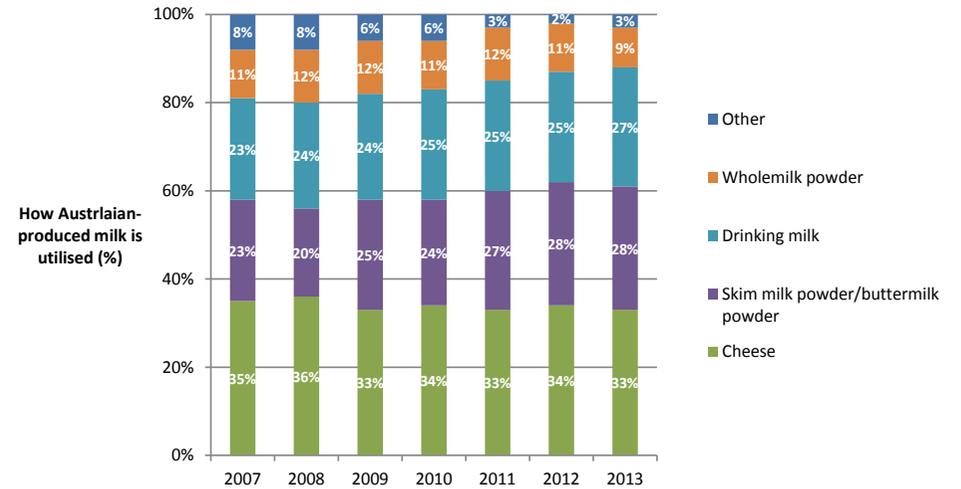
11% of the value of Australia's food production in FY11-12 was milk

Source: DAFF 2013: Figure 1 Value chain for food in Australia, 2011-12



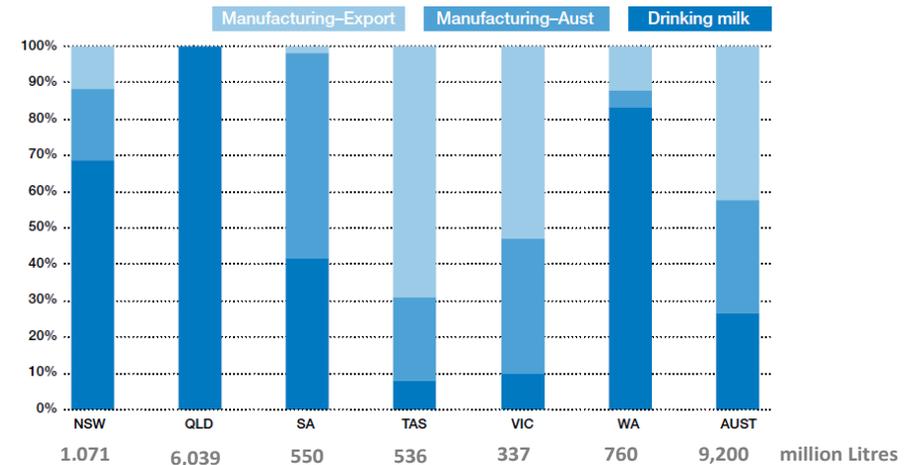
About one-third of Australia's raw milk production is used in cheese

Source: ADIF 2007-2013



Fresh drinking milk dominates the product mix in northern states & WA

Source: ADIF 2013: Figure 3 Use of Australian milk by State 2012/2013

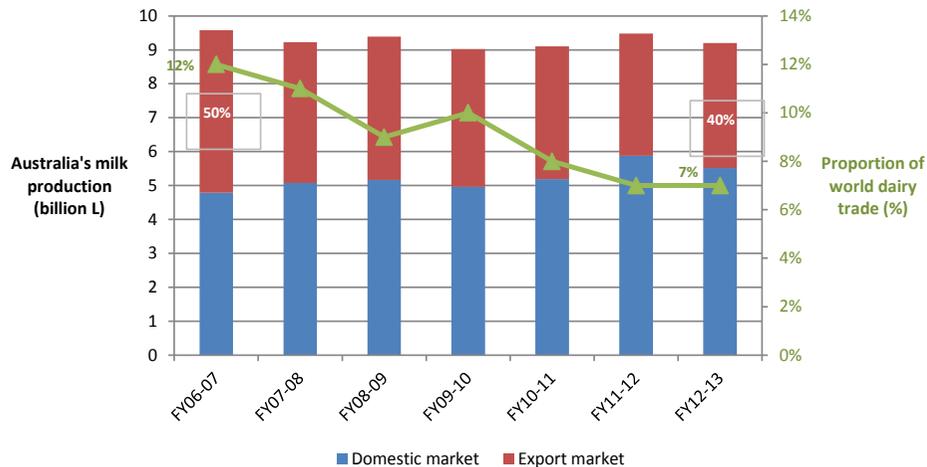


²³⁶ DAFF (2013). Australian food statistics 2011-12, Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra

Dairy product manufacturing in Australia

About 40% of milk produced in Australia was exported in FY12-13

Sources: ADIF 2007-2013



About the people in manufacturing

Dairy manufacturing encompasses a range of disciplines with people working in transport, field services, warehouse, quality assurance, marketing, finance, administration and management as well as milk processing.

- Processing of dairy product accounted for 8.1% of the total employment in Australian food and beverage manufacturing industries (DAFF 2013²³⁷).
- It's estimated that 19,000 people worked in dairy product manufacturing in FY11-12, an increase of 16% since FY06-07 (DAFF 2009²³⁸ & 2013).
- Most people (95.3%) are employees and 3.9% are owner-managers or contributing family workers (ABS dairy 2011).
- Half of the workforce is in the dairy regions and half in metropolitan areas (ABS dairy 2011). 56% of dairy manufacturing workers are in Victoria: 12% in Gippsland, 10% in Western Victoria 10% in the Victorian part of the Murray dairy region and 26% in metro areas.
- In 2011, 68.7% of the dairy manufacturing workforce was male (ABS dairy 2011).
- 77% of the people in dairy manufacturing worked full-time in 2006, and this was similar for both regional and metro areas (ABS census 2006). (Updated figures were not provided for 2011.)
- Common occupations within dairy manufacturing in 2011 were labourers (37%), machinery operators (15%) and managers (15%) (ABS dairy 2011).
- 64.6% of the people in manufacturing worked a standard 35-49 hour week in 2011. Although this is similar to 2006, the proportion of people working 80 hours or more has dropped from 32.9% to a very low level (1.0%) (ABS dairy 2006 & 2011).
- The majority (52.8%) of dairy manufacturing employees in 2011 were between 30 and 49 years of age. However the proportion of employees 50 years and above has increased from 23.0% to 28.7% since 2006 (ABS dairy 2006 & 2011).

²³⁷ DAFF (2013) Australian Food Statistics 2011-12, Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra

²³⁸ DAFF (2009). Australian Food Statistics 2008, Department of Agriculture, Food and Fisheries, Australian Government, Canberra

Dairy product manufacturing in Australia

- The age distribution of employees was consistent across the regions in 2011; except Tasmania, the Subtropical Dairy region and Southern NSW had more young workers, and WA had more workers over 50 years of age (ABS dairy 2011). This was very similar to the age distribution in 2006 (ABS dairy 2006).
- 55.7% of employees earned more than \$1000 per week in 2011 compared to 38.5% in 2006 (ABS dairy 2011). This upward shift in income was similar for regional & metro areas – although it had not occurred in the food manufacturing sectors more generally.

People in dairy product manufacturing increased by 4.1% between 2006 & 2011

Sources: ABS dairy 2006 & 2011 (15,789 & 16,440 respectively)

State	2011	Change since 2006	Where in 2011	
			In dairy regions ^a	In metro areas ^b
Victoria	9,225 people	↑14.4%	59.2%	43.9%
New South Wales	2,861 people	↓11.8%	47.1%	46.3%
Queensland	1,816 people	↓12.4%	21.9%	71.0%
South Australia	757 people	↓20.8%	42.5%	45.8%
Western Australia	756 people	↑ 9.4%	17.6%	75.5%
Tasmania	911 people	↑44.1%	62.6%	None (all regional)
NATIONAL	16,440 people	↑ 4.1%	50.0%	46.4%

(a) Dairy regions don't include the non-dairy regions of Regional Australia
 (b) Refers to major cities (the total population excluding Regional Australia)

95.3% of the people in dairy manufacturing are employees

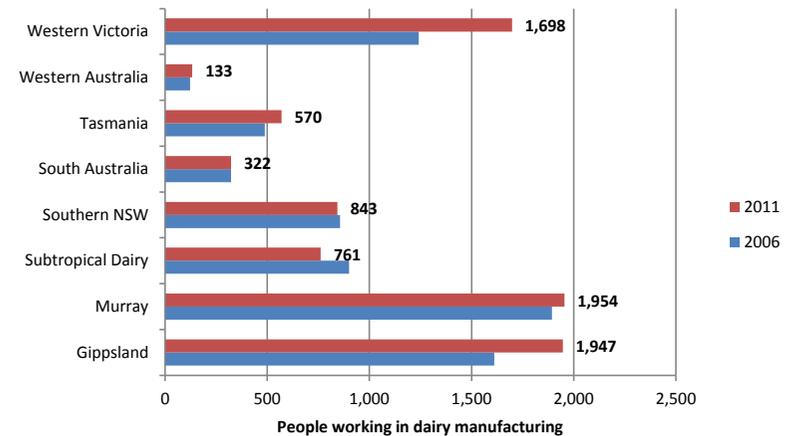
Source: ABS dairy 2006 & 2011 (15,789 & 16,440 respectively)

Everyone in dairy manufacturing	2011	Change since 2006 ^a
Population	16,440 people	↑ 4.1%
Male	68.7%	↑ 4 points
Female	31.3%	↓ 4 points
Employment type		
Employee	95.3%	↓ 3 points
Owner-manager	3.5%	↑ 2 points
Contributing family worker	0.4%	↑ 1 point

(a) Each point equals 0.1%

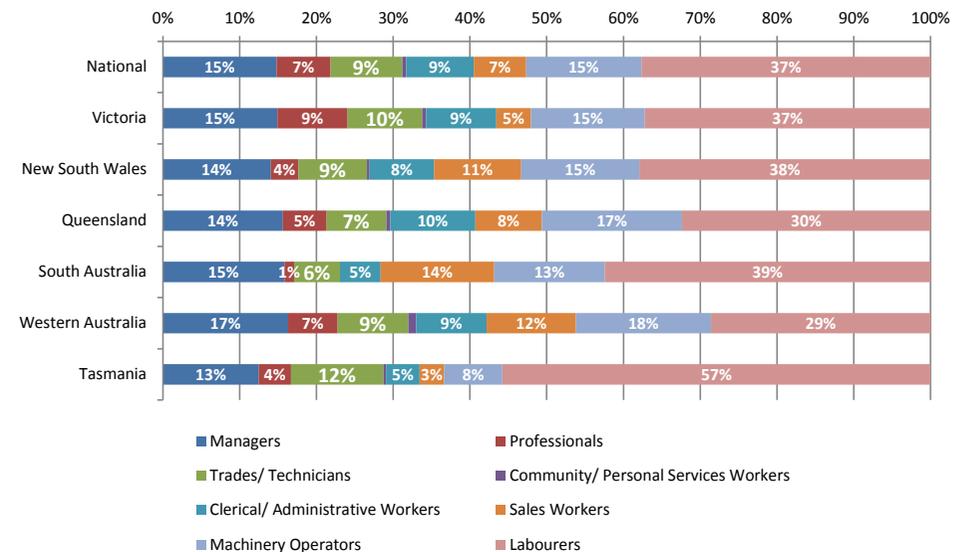
The Victorian dairy regions have 34% of dairy manufacturing workers

Sources: ABS dairy 2006 & 2011 (7,435 and 8,228 respectively)



67% of people are labourers, machinery operators or managers

Source: ABS dairy 2011 (16,440 nationally)



Dairy product manufacturing in Australia

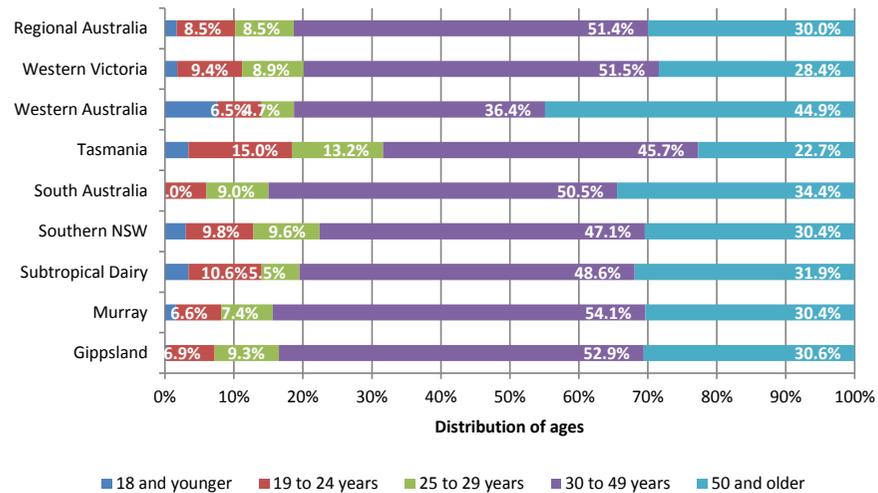
52.8% of employees were between 30 and 49 years of age in 2011

Source: ABS dairy 2006 & 2011 (15,094 & 15,668 dairy manufacturing employees respectively)

Employees	2011	Change since 2006 ^a
Population	15,668 people	↑ 3.8%
Age		
18 and younger	1.2%	↓ 3 points
19 to 24 years	7.6%	↑ 1 point
25 to 29 years	9.7%	↓ 6 points
30 to 49 years	52.8%	↓ 48 points
50 years and older	28.7%	↑ 57 points

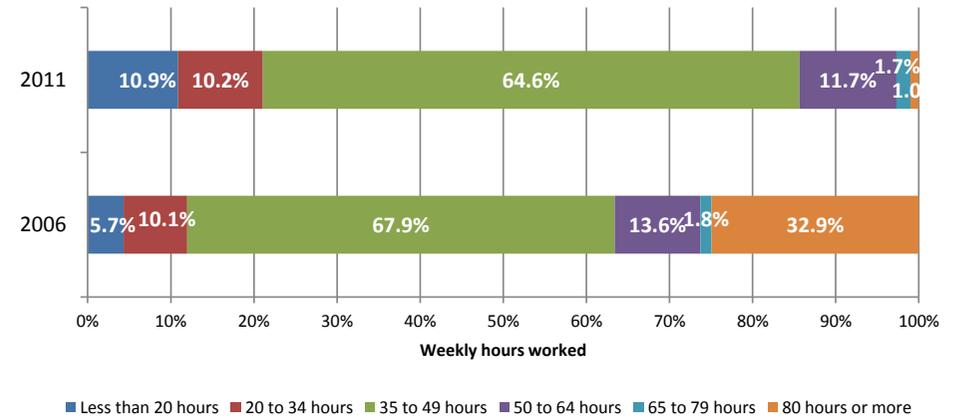
Tasmania had more young people than other regions in 2011

Source: ABS dairy 2011 (8,401 dairy manufacturing employees)



Very few people in 2011 work 80 hours or more

Source: ABS dairy 2006 & 2011 (15,789 & 16,440 respectively)



55.7% of employees earned more than \$1000 per week in 2011

Source: ABS dairy 2011 (all employees in the different manufacturing sectors)

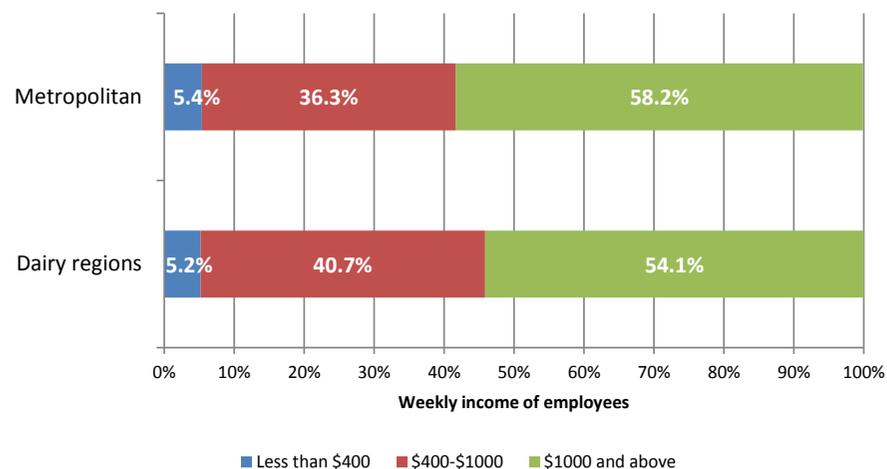
	Dairy product manufacturing in Australia	Food product manufacturing in Australia
Population	16,440 people	164,173 people
Location		
Dairying regions	50%	25%
Other regional areas ^a	4%	16%
Metro ^b	46%	59%
Gender		
Male	68.7%	60.0%
Female	31.3%	40.0%
Weekly income		
Less than \$400	5.2%	14.3%
\$400 to \$1000	39.1%	53.0%
\$1000 and above	55.7%	32.6%

(c) This cross-tabulation not specified in the ABS Dairy 2006 & 2011 spreadsheets

Dairy product manufacturing in Australia

Employee incomes increased in both the dairy regions & metro areas

Source: ABS dairy 2011 (dairy manufacturing employees in metro & dairy regions)



Post farmgate training and skill development

The Australian dairy industry needs to use technology and opportunities to best effect if it is to remain a competitive supplier in the projected global demand for dairy product. This requires business acumen, the relevant technical skills and a high standard of operation.

- 45.2% of the people in dairy product manufacturing have post-schooling qualifications, an increase of 5.3% since 2006 (ABS dairy 2011). This is higher than in the food manufacturing sector more generally where 38.8% of people of a certificate, diploma or degree.
- The level of educational attainment in dairy product manufacturing is also higher than in food manufacturing with proportionally more people having degrees and diplomas (beyond Certificate IV) (ABS dairy 2011).
- There is a marked difference between the qualifications held by people in the dairy regions compared to metro areas (ABS dairy 2011). 20.2% of the people in dairy manufacturing have a Cert III or Cert IV (25.9% in the dairy regions and 14.2% in the metro areas) and 23.4% have a diploma or degree (15.0% in the dairy regions and 33.2% in the metro areas).
- Between 2000 and 2010 apprenticeship and traineeship commencements for 'food trades workers'²³⁹ increased by 35% compared to an 83% increase in traineeships overall (Commonwealth of Australia 2011²⁴⁰).
- The National Centre for Dairy Education Australia offers dairy-specific Vocational Education and Training qualifications, skills recognition and short courses that technically underpin manufacturing capacity in the dairy sector (NCDEA 2013²⁴¹). This post-farmgate training is delivered solely by Goulburn Ovens Institute of TAFE (GoTAFE) in Victoria.
- Generic training in the dairy manufacturing sector (such as food safety, quality control, compliance, forklift operations etc) can be undertaken through Registered Training Organisations other than NCDEA (NCDEA 2013).

²³⁹ 'Food trades workers' as described by the Australian and New Zealand Standard Classification of Occupations (note there is not a more specific category for dairy manufacturing)

²⁴⁰ Commonwealth of Australia (2011). Australian Vocational Education and Training Statistics: apprentices and trainees 2010- annual, Produced by produced by the National Centre for Vocational Education Research (NCVER), Adelaide

²⁴¹ NCDEA (2013). NCDEA program report, Prepared by Coutts J & R for the National Centre for Dairy Education Australia, July

Dairy product manufacturing in Australia

- GoTAFE data shows participation in NCDEA training in manufacturing has increased on average 10,300 student contact hours each year since 2006 (GoTAFE 2010²⁴², NCDEA 2013).
- The majority of people undertake training in skill sets directly related to the operations they perform in the plant. Whether they proceed to complete the qualification often depends on company policy and their progression through the plant (Shane Hellwege personal communication).
- The highest levels of VET participation are at Certificate II which typically aligns to the production operator role (GoTAFE 2010). This qualification level includes competency standards that support basic compliance in areas including WH&S and Food Safety – and is an integral component of the workplace induction for many companies.
- 104 students graduated from NCDEA courses relating to manufacturing in 2010 (GoTAFE 2010). The proportion of the 165 NCDEA graduates in 2012 that were post-farmgate has not been published (NCDEA 2013).
- Cert IV has been awarded to people who enrolled in the NCDEA Diploma, achieved the Cert IV competencies, then opted to exit the course (Shane Hellwege personal communication). Cert IV graduates are less common than previous years as more people are choosing to complete the diploma.
- Much of course delivery is in the workplace: with three-quarters of students participating in courses either fully (63%) or partly (13%) at their workplace (GoTAFE 2010). Webinars are regularly used to provide students with access to expertise (NCDEA 2013).
- In 2010 NCDEA enrolment in (accredited and non-accredited) short courses was at a similar level to enrolment in VET qualifications (GoTAFE 2010).
- In 2010 NCDEA offered a post-graduate vocational qualification through GoTAFE. The qualification was developed through the joint efforts of the Manufacturing Advisory Committee and the Victorian Food Training Council and was designed to enable managers from other industries to expand ('fast track') their knowledge and skill base in dairy manufacturing. 10 people enrolled in the first intake.

- From 2010 to 2013 Dairy Australia sponsored a series of sequential activities to address workforce planning and action for the dairy manufacturing sector. A survey of 17 dairy companies across small, medium and large workforce sizes identified gaps in existing capability and established a prospectus for collective investment and collaboration, especially in promoting an active community of practice around manufacturing workforce development (Windsor and Brightling 2013²⁴³). This has centred on a network of dairy company staff who meet at the Learning Network Forums run by Dairy Food Safety Victoria and discuss workforce issues raised in quality assurance of dairy product manufacture.

45.2% of the people in dairy manufacturing have post-schooling qualifications

Source: ABS dairy 2006 & 2011 (15,789 & 16,440 respectively)

	Dairy product manufacturing in Australia		Food product manufacturing in Australia
	2011	Change since 2006 ^a	2011
Education level			
Certificate I or II	1.6%	Same	1.6%
Certificate III	17.5%	↑ 15 points	16.8%
Certificate IV	2.7%	↑ 10 points	2.0%
Diplomas (inc Advanced)	8.0%	↑ 13 points	6.2%
Bachelor or higher	15.4%	↑ 15 points	12.2%
Currently attending			
TAFE	2.0%	↓ 2 points	2.6%
University	2.0%	↓ 2 points	3.4%

(a) Each point equals 0.1%

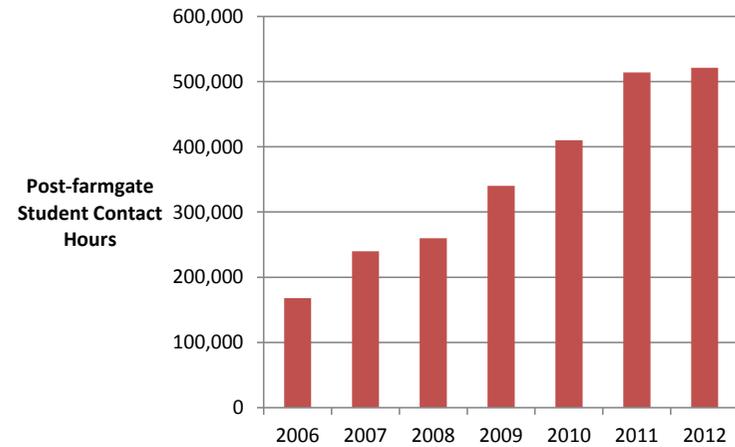
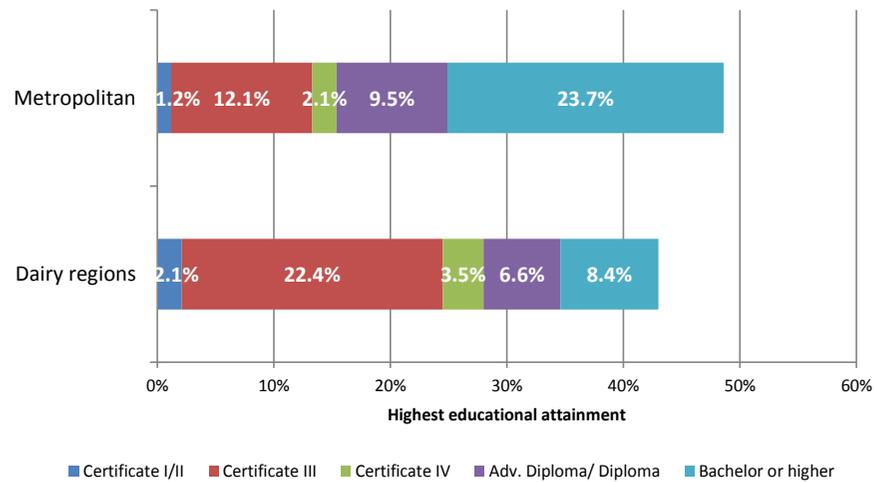
²⁴² GoTAFE enrolment and participation data from John Weichert, General Manager NCDEA

²⁴³ Windsor K, Brightling P (2013). Workforce Planning and Action – Manufacturing, Final report to Dairy Australia, June

Dairy product manufacturing in Australia

One in 3 people in manufacturing in metro areas has a diploma or degree

Source: ABS dairy 2011 (people in dairy manufacturing - 7,624 in metro areas & 8,228 in dairy regions)



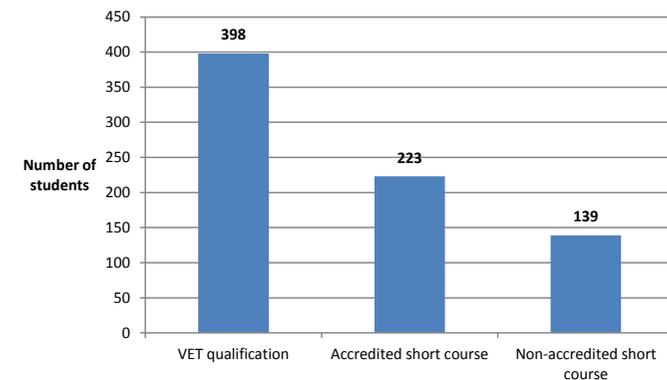
NCDEA technical courses directly relating to dairy manufacturing

Source: NCDEA website

Course title	Course type	Time typically taken to complete
Certificate I in Food Processing	Accredited	
Certificate II in Food Processing	Accredited	
Certificate III in Food Processing	Accredited	
Certificate III in Laboratory Skills	Accredited	2 years
Diploma in Food Science & Technology	Accredited	
Cheese Making Theory and Practice	Short	
Practical Cheesemaking	Short	

Short courses were in as much demand as VET training in 2010

Source: GoTAFE data (all 760 GoTAFE students enrolled in NCDEA post-farm courses in 2010)



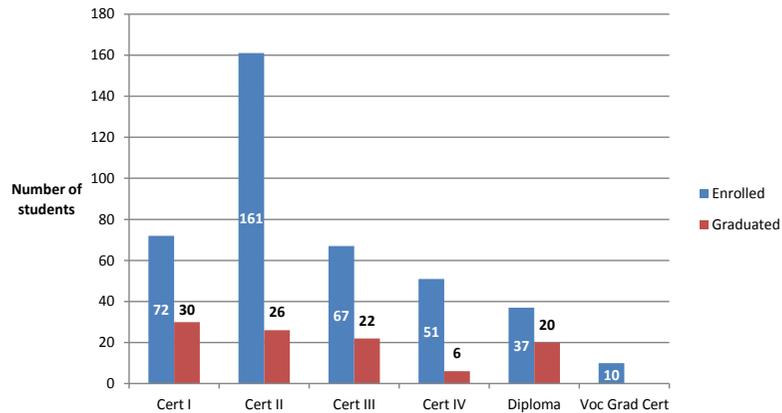
Student contact hours for NCDEA post farmgate training increased 2006 to 2012

Source: GoTAFE (2006-2010 data), NCDEA 2013 (the 2012 figure imputed as 22% of all student contact hours which is the average post-farmgate proportion for 2006-2010)

Dairy product manufacturing in Australia

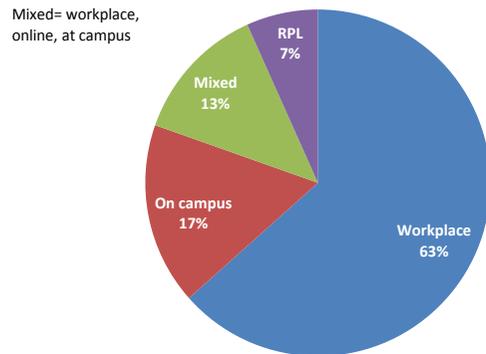
Participation was highest in Cert II courses in 2010

Source: GoTAFE (all 398 GoTAFE students enrolled in VET post-farm qualifications in 2010 & all 104 GoTAFE students completing their VET qualification in 2010)



63% of courses in 2010 were delivered through workplace training

Source: GoTAFE data (all 760 GoTAFE students enrolled in NCDEA post-farm courses in 2010)



Points of interest

- Dairy manufacturers are very large employers in some regional locations (such as Murray Goulburn at Cobram).
- The costs of participating in training are high for dairy companies given the geographic spread of businesses which often incurs travel and accommodation expenses.
- There is a strong preference for training to be provided in the workplace.
- The costs of tailoring and delivering training in the workplace are more suited to large businesses. The issues for many smaller manufacturing businesses are the same as farms: offering decent work and pay.

Information gaps

- More detailed understanding of the dairy manufacturing workforce dynamics (What is the need? How easy is it to get people? Do they stay?)
- Where do the people employed in manufacturing come from? What is their career path? How long do they stay? And why? How does this compare with others in the region or similar sectors?
- How does the income of dairy manufacturing employees compare with others in the food processing sector?
- How many people are permanent (full and part-time), on a fixed-term contract and working casually? Does this differ by gender?
- How well are training needs matched to training funding? Which training organisations are delivering staff training staff, and in what (Cleaning & Sanitation, Food Safety, HACCP, etc)?
- More information around why apprenticeships in 'food trades workers' appears to be lagging behind manufacturing overall, and whether this is the case for dairy manufacturing.

Appendices

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List of figures and tables

2013 Factfinder @ a glance 2

Materials and method 3

 The Factfinder focuses on the farming and manufacturing parts of the supply chain ... 4

 The ‘dairy regions’ described in this report 4

 About the farms and farmers in the 2012 National Dairy Farmer Survey 6

 Sample sizes for the main data sources..... 6

Dairy farm businesses in Australia 7

 Dairy is Australia’s third largest rural industry..... 8

 The gross value of milk production in FY11-12 was \$3.99 billion 8

 About 9% of agriculture’s gross value comes from milk production 9

 8% of Australian farmers (owners & managers) were in dairying in 2011 9

 In 2012 the dairy industry was based on 6,770 farm businesses 9

 Milk production has maintained despite fewer farms and cows..... 9

 38% of the milk produced in Australia was exported in 2012 10

 Dairy farmers invest in RD&E through industry levies..... 10

 Two ABS sources quote very different numbers for the people in dairy^a 11

 20% more people were dairy cattle farming in 2012 than in 2007 11

 Employment in farm & fisheries was 61% less in 2012 than in 2001 11

 Employment in food manufacturing was 24% higher in 2012 than in 2001..... 11

 There are 8 dairying regions in Australia 12

 25% of agricultural workers in the dairy regions worked on dairy farms in 2011 12

 72% of the people in the industry worked in the dairy regions in 2011..... 12

 Farm numbers have reduced in all regions over the past 7 years 13

 Dairying is a main agricultural employer in Western Victoria, Tasmania & the Murray 13

 In 2013, 52% of the national supply was produced by 19% herds 14

 9% of herds had more than 500 cows in 2012 compared to 3% in 2004 14

 Farm attributes that may ‘shape’ farming systems & their management..... 15

 Dairy is the sole enterprise for three-quarters of farms..... 15

 Beef cattle is important for mixed enterprise dairy businesses 15

 An overview of the dairy farming systems in Australia 15

 Herd distributions in each region 16

 Calving systems in each region 16

 Feeding systems in each region 16

 Most dairy farms are family-owned & operated 17

 54% of the people on farm are owner/managers or their partners 18

 Sharefarming has increased in WA, SA, Gippsland and Western Victoria 18

 Farm businesses can be segmented based on attitudes to dairying 19

 In 2012, 19% of farm businesses were in an expansion phase 19

 The Navigator: Where in the business are the people issues? 19

 26% of employment conditions were written in 2006 20

 71% of farms did not have written job descriptions for workers in 2008 21

 79% of farms had not conducted performance reviews for all workers in 2009 21

 Big herds were more likely to have conducted performance reviews 21

 In 2007 55% of farmers relied on themselves for information on employment 21

 The cost per injury in agriculture in 2010 was \$6,600..... 23

 39% of dairy farms have a documented health and safety plan 23

 56% of farms using quad bikes require helmets to be worn 23

 Farm businesses need to be productive, profitable, growing wealth 25

 Insights into the ingredients for improving farm sector wealth 25

 Financial measures used to assess farm businesses..... 25

 Fluctuations in farm income and profitability 26

 Australian farmers receive a milk price comparable to other countries 28

 Productivity increased while output & input growth declined since 2000..... 28

 There are marked differences in the way the states achieved productivity growth.... 29

 The rate of Total Factor Productivity growth in Australia is slowing 29

 Many technological advances have occurred over the past 10 years 29

 Grain & concentrates are mainly fed to lift milk production..... 29

 Variability in profit was more a feature within feeding systems than between them . 30

 Rotary dairies have the highest level of automation of shed operations..... 30

 63% of farmers in 2011 intended to make management or technology changes..... 30

 Access to funding was limiting change on 29% of farms in 2011 30

 A common mindset is to increase productivity within the existing scale of the business 31

Appendix

Efficient ways of doing things is a priority for farmers	32	41% of farmers had plans for future farm ownership in 2007	47
EBIT is not significantly correlated with labour productivity	32	Where dairying sits in the labour market	49
Operating costs exceeded income in 43% of herds in Victoria in FY12-13	32	A framework to help identify the People priorities in the regions	50
Operational efficiency of herds can vary year-to-year	33	A model for operationalizing Dairy Workforce Planning and Action	51
Farm business profit varies from year to year	34	The steps involved in dairy workforce development.....	51
Farm business profit was positive on 39% of ADIS farms in FY12-13	34	Population changes in Australia’s dairy regions between 2006 & 2011.....	52
Farm cash income is the difference between cash costs & cash receipts	34	Subtropical Dairy is the most populous dairy region & Tasmania is the least.....	52
The average farm cash income fell in all regions in FY12-13	34	Age distributions in the dairy regions are similar to regional Australia.....	52
Milk is the main source of income	35	People in Tasmania’s dairy region have the lowest level of educational attainment ..	53
On average people were 16% of the total costs to farm businesses in FY12-13	36	Youth attendance at TAFE/uni is higher in Gippsland & Southern NSW	53
Returns on dairy farms in FY11-12 were higher than other broadacre enterprises	38	Changes in workforce participation in Australia’s dairying regions.....	54
Returns have decreased on average on Victorian farms since 2010	38	Participation rates are highest in Gippsland & Western Victoria	54
Purchase of land continues to be the main way of increasing capital.....	38	There has been a rise in unemployment in the WA & SA dairy regions	54
Increases in land values have been sustaining farm business equity	39	Unemployment rates are lowest in Western Victoria, WA & the Murray.....	54
Most dairy farm businesses have high levels of equity	39	Youth unemployment is highest in Tasmania, Subtropical Dairy & SA.....	55
Debt on dairy farms has a skewed distribution	39	A few sectors dominate employment in the dairy regions.....	55
The average debt on dairy farms was 52% higher in 2012 than 2006	39	The employment share of Agriculture, Forestry & Fisheries has dropped	55
Most farm debt is spent on land purchases and working capital	40	5.2% of the workforce in Western Victoria was on dairy farms in 2011	56
The debt services ratio decreased in FY11-12 & FY12-13 due to lower interest rates ..	41	Dairy farming’s share of employment has decreased in most regions.....	56
Financial risk indicators for dairy farm businesses in Victoria	41	The median weekly earning for dairy farming in 2012 was \$880.....	57
The value of FMDs held varies greatly from year to year	41	45% of the population in dairy regions work 35 to 49 hours per week.....	57
The value of FMDs held varies greatly between the regions.....	41	In 2011 more people were working part-time than in 2006	57
Farms that are “not intending to grow” have more Farm Management Deposits.....	42	Weekly income varies between the dairy regions.....	58
For many farmers the preferred strategy in hard times is to “live on less”	42	65% of farms employ people	59
Farmers who are positive about the future are more likely to invest in it	43	Fewer farms in the Subtropical & Victorian dairy regions employ people	59
Farmers of larger herds are more positive about the industry’s future	43	Farms that employ typically employ 1-2 people.....	59
Tasmania was the most optimistic of the dairy regions in 2012	43	Larger herds tend to have more people working on the farm	59
The age distribution of dairy farmers changed from 1981 to 2006.....	44	One in 5 farms is expecting make staff changes in the next 12 months	61
What’s impeding new investment in the Australian dairy industry	45	Farmers anticipated putting on about 1,662 people in 2012	61
Investment models presented in Horizon 2020.....	45	Demand for farmhands was high in all regions in 2012	61
In 2006 46% of farmers were intending to pass the farm onto family	46	In 2012 many people working as assistant farmhands were new to the industry	61
In 2007, 38% of farmers over 60 years didn’t have a plan for future farm ownership. 46		Success in filling vacant positions in 2006	62

Appendix

Farmers often tried more than one method to fill a vacant position	62	80% of dairy farms had used contractors in 2011	78
64% of farmers had difficulty finding the right people to work on farm	62	The role of the dairy industry in training	78
Larger herds are more likely to offer incentives to retain employees.....	64	‘On the job’ training is common in agriculture	79
Difficulties with keeping people affected farm business performance	64	Pathways to increasing dairy-specific skills and knowledge	79
What works in retaining employees on dairy farms, and why	64	Attitude & work readiness are highly valued by employers in agriculture.....	80
The people on farm.....	67	35% of the people on farm have post-school qualifications	80
60% of people working on dairy farms are in Victoria	68	In 2006 86% of farmers were satisfied with the skills of their employees	80
The dairy farm workforce increased by 20% between 2007 & 2012 ^a	69	Dairy-specific NCDEA courses	81
The number of people working on farm peaked in 2009	69	The Farm Career Pathway is an industry-agreed list of what’s needed to run a productive and profitable dairy farm	81
People working in paid roles has increased by 7% between 2007 & 2012.....	69	Not all employers are aware of the training options available.....	83
38% of the farm workforce is employees (from 31% in 2006)	69	Participation in pre-farm gate VET increased between 2006 & 2012	83
Gippsland has the highest proportion of owner-managers of all regions	70	Popular units in 2010 were those relating to animals and people	83
WA has the highest proportion of people working part-time on farms	70	It’s estimated that 1 in every 10 farms has a trainee	84
In 2005, 58% of the farm workforce were full-time family members	70	In 2011 ‘Agriculture, Forestry & Fisheries’ had a higher fatality rate of employees than any other industry	86
Age, hours & income of owner-managers differ to employees.....	71	Deaths per farm establishments was highest in the Northern Territory.....	86
Dairy farming owner-managers work long hours	71	Half the unintentional deaths of farm workers are vehicle-related	86
More owner-managers in Subtropical Dairy are over the age of 50	72	There is a downward trend in serious claims in ‘Agriculture, Forestry & Fisheries’	86
Many owner-managers work extended hours	72	Dairy farming had the lowest rate of workers’ compensation claims in ‘Agriculture, Forestry & Fisheries’	87
Men work similar hours irrespective of their role but this is not the case for women	72	Injury rate on dairy farms is lower than many other primary industries.....	87
One in 5 owner-managers draws an income of less than \$1000 per week	72	In 2011 there had been a significant injury on about 1 in 7 farms.....	87
Farmers value discussion groups as a source of information & advice	73	Typically half of the injured people lose more than 3 weeks work	87
What the top performing family farm businesses say about training & education.....	74	Many compensation claims arise from injury associated with handling cattle.....	88
Use of paid advisory services is well established on large farms.....	74	Major types of injuries sustained in dairies.....	88
Dairy farmers access service providers more than other farming sectors	74	Dairy has more children living on the farm than other industries.....	89
40.3% of employees are 29 years of age or under	75	What’s done to protect children from hazards (machinery, dams, chemicals etc)	89
91% of people are employed as (assistant to senior) farmhands.....	75	48% of dairy farmers visit their GP for a check-up at least once a year	90
Tasmania has more young employees.....	75	Long working hours contributed to mental health issues on farms in the past year ...	90
2010 Pastoral Award classifications & typical remuneration rates	76	Aspects of farming that can make it difficult to be healthy.....	90
Dairy farming employees earn less than other employees in the region	77	Achieving Sustainable Improvement research findings ^a	92
Dairy farm employees work long hours compared to others	77		
Extended working hours are common across all dairy regions	77		
More employees in the Subtropical Dairy earn less than \$400 per week	77		

Appendix

By the end of 2013, 119 people had enrolled in the HRM (Dairy) diploma and 88% had graduated.....	93
82% of the HRM (Dairy) diploma students were advisers (not farmers)	93
Dairy product manufacturing in Australia	95
There has been a downward trend in dairy product exports since 2001	97
11% of the value of Australia’s food production in FY11-12 was milk.....	97
About one-third of Australia’s raw milk production is used in cheese	97
Fresh drinking milk dominates the product mix in northern states & WA	97
About 40% of milk produced in Australia was exported in FY12-13	98
People in dairy product manufacturing increased by 4.1% between 2006 & 2011	99
The Victorian dairy regions have 34% of dairy manufacturing workers	99
67% of people are labourers, machinery operators or managers	99
Tasmania had more young people than other regions in 2011	100
55.7% of employees earned more than \$1000 per week in 2011	100
Employee incomes increased in both the dairy regions & metro areas	101
45.2% of the people in dairy manufacturing have post-schooling qualifications.....	102
One in 3 people in manufacturing in metro areas has a diploma or degree	103
NCDEA technical courses directly relating to dairy manufacturing	103
Student contact hours for NCDEA post farmgate training increased 2006 to 2012 ...	103
Short courses were in as much demand as VET training in 2010	103
Participation was highest in Cert II courses in 2010	104
63% of courses in 2010 were delivered through workplace training	104
Appendices	105

Appendix

Dairy region Statistical Local Areas for 'ABS dairy'

Dairy regions are comprised of ABS Statistical Local Areas where 20 or more people work in dairy farming or dairy manufacturing. These SLAs are aggregated into dairy subregions, dairy regions and state (sorted in the table below by dairy region).

Mapping for the 2011 was based on the 2006 list. SLAs that were included in 2006 and excluded in 2011 are shaded grey in the table.

Statistical Local Area	Dairy Subregion	Dairy Region	State
Bega Valley (A)	Bega NSW	NSW	New South Wales
Cowra (A)	Central NSW	NSW	New South Wales
Dungog (A)	Hunter NSW	NSW	New South Wales
Eurobodalla (A)	Southern NSW	NSW	New South Wales
Forbes (A)	Central NSW	NSW	New South Wales
Gloucester (A)	Hunter NSW	NSW	New South Wales
Great Lakes (A)	Northern Rivers NSW	NSW	New South Wales
Greater Taree (C)	Northern Rivers NSW	NSW	New South Wales
Hastings (A) - Pt B	Northern Rivers NSW	NSW	New South Wales
Hawkesbury (C)	Central NSW	NSW	New South Wales
Kempsey (A)	Northern Rivers NSW	NSW	New South Wales
Kiama (A)	Southern NSW	NSW	New South Wales
Maitland (C)	Hunter NSW	NSW	New South Wales
Muswellbrook (A)	Hunter NSW	NSW	New South Wales
Parry (A) - Pt B	Hunter NSW	NSW	New South Wales
Port Stephens (A)	Hunter NSW	NSW	New South Wales
Scone (A)	Hunter NSW	NSW	New South Wales
Shellharbour (C)	Southern NSW	NSW	New South Wales
Shoalhaven (C) - Pt A	Southern NSW	NSW	New South Wales
Shoalhaven (C) - Pt B	Southern NSW	NSW	New South Wales
Singleton (A)	Hunter NSW	NSW	New South Wales
Wagga Wagga (C) - Pt A	Central NSW	NSW	New South Wales
Wagga Wagga (C) - Pt B	Central NSW	NSW	New South Wales
Wingecarribee (A)	Central NSW	NSW	New South Wales
Wollondilly (A)	Central NSW	NSW	New South Wales
Liverpool (C) - West	Central NSW	NSW	New South Wales
Leeton (A)	central nsw	NSW	New South Wales
Camden (A)	Central NSW	NSW	New South Wales
Upper Hunter Shire (A)	Hunter NSW	NSW	New South Wales
Tamworth Regional (A) - Pt B	Central NSW	NSW	New South Wales
Tamworth Regional (A) - Pt A	Central NSW	NSW	New South Wales
Cabonne (A)	Central NSW	NSW	New South Wales
Adelaide Hills (DC) - North	Barossa-Central SA	SA	South Australia
Adelaide Hills (DC) Bal	Barossa-Central SA	SA	South Australia
Alexandrina (DC) - Coastal	Fleurieu Peninsula	SA	South Australia
Alexandrina (DC) - Strathalbyn	Fleurieu Peninsula	SA	South Australia

Statistical Local Area	Dairy Subregion	Dairy Region	State
Barossa (DC) - Barossa	Barossa-Central SA	SA	South Australia
Grant (DC)	Barossa-Central SA	SA	South Australia
Mid Murray (DC)	Barossa-Central SA	SA	South Australia
Mount Barker (DC) - Central	Barossa-Central SA	SA	South Australia
Mount Barker (DC) Bal	Barossa-Central SA	SA	South Australia
Murray Bridge (RC)	Fleurieu Peninsula	SA	South Australia
Onkaparinga (C) - Hills	Barossa-Central SA	SA	South Australia
Tatiara (DC)	South East/ Mt Gambier SA	SA	South Australia
The Coorong (DC)	Fleurieu Peninsula	SA	South Australia
Victor Harbor (DC)	Fleurieu Peninsula	SA	South Australia
Wattle Range (DC) - East	South East/ Mt Gambier SA	SA	South Australia
Wattle Range (DC) - West	South East/ Mt Gambier SA	SA	South Australia
Yankalilla (DC)	Fleurieu Peninsula	SA	South Australia
Mount Gambier (C)	South East/ Mt Gambier SA	SA	South Australia
Victor Harbor (C)	South East/ Mt Gambier SA	SA	South Australia
Break O'Day (M)	Tasmania	Tasmania	Tasmania
Burnie (C) - Pt B	Tasmania	Tasmania	Tasmania
Central Coast (M) - Pt A	Tasmania	Tasmania	Tasmania
Central Coast (M) - Pt B	Tasmania	Tasmania	Tasmania
Circular Head (M)	Tasmania	Tasmania	Tasmania
Dorset (M)	Tasmania	Tasmania	Tasmania
Kentish (M)	Tasmania	Tasmania	Tasmania
King Island (M)	Tasmania	Tasmania	Tasmania
Meander Valley (M) - Pt B	Tasmania	Tasmania	Tasmania
Waratah/Wynyard (M) - Pt A	Tasmania	Tasmania	Tasmania
Waratah/Wynyard (M) - Pt B	Tasmania	Tasmania	Tasmania
Burnie (C) - Pt A	Tasmania	Tasmania	Tasmania
Bass Coast (S) Bal	South Gippsland	Gippsland	Victoria
Baw Baw (S) - Pt A	West Gippsland	Gippsland	Victoria
Baw Baw (S) - Pt B East	West Gippsland	Gippsland	Victoria
Baw Baw (S) - Pt B West	West Gippsland	Gippsland	Victoria
Cardinia (S) - North	West Gippsland	Gippsland	Victoria
Cardinia (S) - Pakenham	West Gippsland	Gippsland	Victoria
Cardinia (S) - South	West Gippsland	Gippsland	Victoria
Casey (C) - South	West Gippsland	Gippsland	Victoria
E. Gippsland (S) - Orbost	East Gippsland	Gippsland	Victoria
E. Gippsland (S) - South-West	East Gippsland	Gippsland	Victoria
E. Gippsland (S) Bal	East Gippsland	Gippsland	Victoria
Latrobe (C) - Moe	West Gippsland	Gippsland	Victoria
Latrobe (C) - Morwell	West Gippsland	Gippsland	Victoria
Latrobe (C) - Traralgon	West Gippsland	Gippsland	Victoria
Latrobe (C) Bal	West Gippsland	Gippsland	Victoria
South Gippsland (S) - Central	South Gippsland	Gippsland	Victoria
South Gippsland (S) - East	South Gippsland	Gippsland	Victoria
South Gippsland (S) - West	South Gippsland	Gippsland	Victoria

Appendix

Statistical Local Area	Dairy Subregion	Dairy Region	State
Wellington (S) - Alberton	East Gippsland	Gippsland	Victoria
Wellington (S) - Avon	East Gippsland	Gippsland	Victoria
Wellington (S) - Maffra	East Gippsland	Gippsland	Victoria
Wellington (S) - Rosedale	East Gippsland	Gippsland	Victoria
Yarra Ranges (S) - South-West	West Gippsland	Gippsland	Victoria
Casey (C) - Berwick	West Gippsland	Gippsland	Victoria
Casey (C) - Cranbourne	West Gippsland	Gippsland	Victoria
Gr. Dandenong (C) Bal	West Gippsland	Gippsland	Victoria
Casey (C) - Hallam	West Gippsland	Gippsland	Victoria
Wellington (S) - Sale	East Gippsland	Gippsland	Victoria
Alpine (S) – East	North East/Alpine VIC	Murray	Victoria
Alpine (S) – West	North East/Alpine VIC	Murray	Victoria
Berrigan (A)	Riverina	Murray	New South Wales
Campaspe (S) – Kyabram	Northern VIC	Murray	Victoria
Campaspe (S) – Rochester	Northern VIC	Murray	Victoria
Campaspe (S) – South	Northern VIC	Murray	Victoria
Conargo (A)	Riverina	Murray	New South Wales
Delatite (S) – North	North East/Alpine VIC	Murray	Victoria
Gannawarra (S)	Northern VIC	Murray	Victoria
Gr. Shepparton (C) - Pt A	Northern VIC	Murray	Victoria
Gr. Shepparton (C) - Pt B East	Northern VIC	Murray	Victoria
Gr. Shepparton (C) - Pt B West	Northern VIC	Murray	Victoria
Indigo (S) - Pt A	North East/Alpine VIC	Murray	Victoria
Loddon (S) - North	Northern VIC	Murray	Victoria
Loddon (S) - South	Northern VIC	Murray	Victoria
Moira (S) - East	Northern VIC	Murray	Victoria
Moira (S) - West	Northern VIC	Murray	Victoria
Mount Alexander (S) Bal	Northern VIC	Murray	Victoria
Murray (A)	Riverina	Murray	New South Wales
Strathbogie (S)	Northern VIC	Murray	Victoria
Swan Hill (RC) Bal	Northern VIC	Murray	Victoria
Towong (S) - Pt A	North East/Alpine VIC	Murray	Victoria
Towong (S) - Pt B	North East/Alpine VIC	Murray	Victoria
Tumbarumba (A)	Riverina	Murray	New South Wales
Wakool (A)	Riverina	Murray	New South Wales
Wangaratta (RC) - North	North East/Alpine VIC	Murray	Victoria
Wangaratta (RC) - South	North East/Alpine VIC	Murray	Victoria
Wodonga (RC)	North East/Alpine VIC	Murray	Victoria
Campaspe (S) - Rochester	Northern VIC	Murray	Victoria
Campaspe (S) - Kyabram	Northern VIC	Murray	Victoria
Campaspe (S) - South	Northern VIC	Murray	Victoria
Campaspe (S) - Echuca	Northern VIC	Murray	Victoria
Alpine (S) - East	North East/Alpine VIC	Murray	Victoria
Benalla (RC) Bal	Northern VIC	Murray	Victoria
Atherton (S)	Far North QLD	Subtropical Dairy	Queensland

Statistical Local Area	Dairy Subregion	Dairy Region	State
Ballina (A)	Northern Rivers NSW	Subtropical Dairy	New South Wales
Banana (S)	South East/Central QLD	Subtropical Dairy	Queensland
Beaudesert (S) - Pt B	South East/Central QLD	Subtropical Dairy	Queensland
Bellingen (A)	Northern Rivers NSW	Subtropical Dairy	New South Wales
Biggenden (S)	South East/Central QLD	Subtropical Dairy	Queensland
Boonah (S)	South East/Central QLD	Subtropical Dairy	Queensland
Byron (A)	Northern Rivers NSW	Subtropical Dairy	New South Wales
Caboolture (S) - Pt B	South East/Central QLD	Subtropical Dairy	Queensland
Calliope (S) - Pt B	South East/Central QLD	Subtropical Dairy	Queensland
Caloundra (C) - Hinterland	South East/Central QLD	Subtropical Dairy	Queensland
Cambooya (S) - Pt B	South East/Central QLD	Subtropical Dairy	Queensland
Chinchilla (S)	South East/Central QLD	Subtropical Dairy	Queensland
Clifton (S)	South East/Central QLD	Subtropical Dairy	Queensland
Cooloolah (S) - Gympie only	South East/Central QLD	Subtropical Dairy	Queensland
Cooloolah (S) (excl. Gympie)	South East/Central QLD	Subtropical Dairy	Queensland
Crow's Nest (S) - Pt B	South East/Central QLD	Subtropical Dairy	Queensland
Eacham (S)	South East/Central QLD	Subtropical Dairy	Queensland
Esk (S)	South East/Central QLD	Subtropical Dairy	Queensland
Gatton (S)	South East/Central QLD	Subtropical Dairy	Queensland
Guanaba-Currumbin Valley	South East/Central QLD	Subtropical Dairy	Queensland
Herberton (S)	South East/Central QLD	Subtropical Dairy	Queensland
Ipswich (C) - South-West	South East/Central QLD	Subtropical Dairy	Queensland
Ipswich (C) - West	South East/Central QLD	Subtropical Dairy	Queensland
Jondaryan (S) - Pt A	South East/Central QLD	Subtropical Dairy	Queensland
Jondaryan (S) - Pt B	South East/Central QLD	Subtropical Dairy	Queensland
Kilcoy (S)	South East/Central QLD	Subtropical Dairy	Queensland
Kilkivan (S)	South East/Central QLD	Subtropical Dairy	Queensland
Kingaroy (S)	South East/Central QLD	Subtropical Dairy	Queensland
Kyogle (A)	Northern Rivers NSW	Subtropical Dairy	New South Wales
Laidley (S)	South East/Central QLD	Subtropical Dairy	Queensland
Lismore (C) - Pt A	Northern Rivers NSW	Subtropical Dairy	New South Wales
Lismore (C) - Pt B	Northern Rivers NSW	Subtropical Dairy	New South Wales
Livingstone (S)	South East/Central QLD	Subtropical Dairy	Queensland
Maroochy (S) Bal	South East/Central QLD	Subtropical Dairy	Queensland
Mirani (S)	South East/Central QLD	Subtropical Dairy	Queensland
Miriam Vale (S)	South East/Central QLD	Subtropical Dairy	Queensland
Monto (S)	South East/Central QLD	Subtropical Dairy	Queensland
Mundubbera (S)	South East/Central QLD	Subtropical Dairy	Queensland
Murgon (S)	South East/Central QLD	Subtropical Dairy	Queensland
Nambucca (A)	Northern Rivers NSW	Subtropical Dairy	New South Wales
Nanango (S)	South East/Central QLD	Subtropical Dairy	Queensland
Noosa (S) Bal	South East/Central QLD	Subtropical Dairy	Queensland
Pine Rivers (S) Bal	South East/Central QLD	Subtropical Dairy	Queensland
Pittsworth (S)	South East/Central QLD	Subtropical Dairy	Queensland
Richmond Valley (A) Bal	Northern Rivers NSW	Subtropical Dairy	New South Wales

Appendix

Statistical Local Area	Dairy Subregion	Dairy Region	State
Rosalie (S) - Pt B	South East/Central QLD	Subtropical Dairy	Queensland
Tiaro (S)	South East/Central QLD	Subtropical Dairy	Queensland
Tweed (A) - Pt B	Northern Rivers NSW	Subtropical Dairy	New South Wales
Wambo (S)	South East/Central QLD	Subtropical Dairy	Queensland
Warwick (S) - East	South East/Central QLD	Subtropical Dairy	Queensland
Warwick (S) - North	South East/Central QLD	Subtropical Dairy	Queensland
Wondai (S)	South East/Central QLD	Subtropical Dairy	Queensland
Beaudesert (S) - Pt C	South East/Central QLD	Subtropical Dairy	Queensland
Ipswich (C) - Central	South East/Central QLD	Subtropical Dairy	Queensland
Beaudesert (S) - Pt A	South East/Central QLD	Subtropical Dairy	Queensland
Rockhampton (C)	Far North QLD	Subtropical Dairy	Queensland
Albany (C) Bal	South-West WA	WA	Western Australia
Augusta-Margaret River (S)	South-West WA	WA	Western Australia
Busselton (S)	South-West WA	WA	Western Australia
Capel (S) - Pt B	South-West WA	WA	Western Australia
Dardanup (S) - Pt B	South-West WA	WA	Western Australia
Harvey (S) - Pt B	South-West WA	WA	Western Australia
Manjimup (S)	South-West WA	WA	Western Australia
Murray (S)	South-West WA	WA	Western Australia
Serpentine-Jarrahdale (S)	South-West WA	WA	Western Australia
Waroona (S)	South-West WA	WA	Western Australia
Nannup (S)	South-West WA	WA	Western Australia
Ballarat (C) - North	Colac	Western Victoria	Victoria
Colac-Otway (S) - Colac	Colac	Western Victoria	Victoria
Colac-Otway (S) - North	Colac	Western Victoria	Victoria
Colac-Otway (S) - South	Colac	Western Victoria	Victoria
Corangamite (S) - North	Colac	Western Victoria	Victoria
Corangamite (S) - South	Colac	Western Victoria	Victoria
Glennelg (S) - Heywood	Heywood	Western Victoria	Victoria
Glennelg (S) - North	Heywood	Western Victoria	Victoria
Moorabool (S) - West	Colac	Western Victoria	Victoria
Moyne (S) - North-East	Terang/Warnambool	Western Victoria	Victoria
Moyne (S) - North-West	Terang/Warnambool	Western Victoria	Victoria
Moyne (S) - South	Terang/Warnambool	Western Victoria	Victoria
S. Grampians (S) Bal	Heywood	Western Victoria	Victoria
Surf Coast (S) - West	Colac	Western Victoria	Victoria
Warrnambool (C)	Terang/Warnambool	Western Victoria	Victoria

