

**Department of Agriculture, Fisheries and Forestry Submission to the Senate Education,
Employment and Workplace Relations Committee inquiry into *Higher education and skills training
to support future demand in agriculture and agribusiness in Australia.***

The Department of Agriculture, Fisheries, and Forestry (DAFF) welcomes the opportunity to contribute to the Committee's work examining higher education and skills training. Responsibility for Australian Government education and training policy falls with the Department of Education, Employment and Workplace Relations (DEEWR). Whilst it does not have a direct responsibility in these areas, DAFF believes it can contribute to the Committee's understanding of the impact of any supply and demand discrepancies on business, research and the economy more broadly.

Agriculture and the economy

Agriculture makes an important contribution to Australia's economy. In 2009-10, the gross value of agriculture, fisheries and forestry was \$43.6 billion, contributing approximately 3 per cent of the national Gross Domestic Product (GDP).¹

Agriculture also makes an important contribution to Australia's trade. In 2011-12 the value of Australia's agricultural, fisheries and forestry exports is forecast to reach \$38.6 billion, an increase of 6.6 per cent from \$36.2 billion in 2010-11.² Australia's three largest food exports are grains and oilseeds (\$8.6 billion), meat (\$6.7 billion) and dairy (\$2.3 billion).³

The agricultural sector also has an impact beyond the value of its production as it supports the wider food supply chain. This supply chain consists of food and beverage processing and manufacturing, distribution, wholesaling, food and beverage retailing, food services and trade. The food and beverage processing industry turnover is \$77 billion (2006-07).⁴

Agricultural workforce

Between August 2001 and 2011, employment in agriculture has fallen by 119,300 jobs (or 27 per cent) to 319,800.⁵ The majority of these job losses occurred early in the decade with employment falling by only 9 per cent since August 2006.⁶ This suggests that the rate of job losses is declining. The majority of job losses are attributed to drought conditions and recent natural disasters.⁷ The most recent workforce projections by DEEWR forecast agricultural employment to grow at a rate of 1.5 per cent per annum.⁸

¹ Department of Agriculture, Fisheries and Forestry, Annual Report 2010-11, Canberra, 2011

² Australian Bureau of Agricultural Economics and Sciences, Agricultural export earnings to rise despite economic uncertainty, Media Release, 20 September 2011.

³ Department of Agriculture, Fisheries and Forestry, Annual Report 2010-11, Canberra, 2011

⁴ Department of Agriculture, Fisheries and Forestry, Issues paper to inform development of a national food plan, Canberra, June 2011.

⁵ Australian Bureau of Statistics, 6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, Aug 2011

⁶ Australian Bureau of Statistics, 6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, Aug 2011

⁷ Department of Education, Employment and Workplace Relations, Industry Employment Projections: 2011 Report, Canberra, 2011

⁸ Department of Education, Employment and Workplace Relations, Industry Employment Projections: 2011 Report, Canberra, 2011

The agricultural workforce comprises not only the more obvious labourers, associated trades and managers but also agricultural scientists and researchers. Agricultural sciences includes research and development on; production techniques, productivity, transforming primary products into end-consumer products and biosecurity which protects Australia's favourable pest and disease status and enhances Australia's access to international animal and plant related markets.

Current workforce demographics highlight some important facts about Australia's agricultural labour market:

- The agriculture, fisheries and forestry industry has the largest share of mature age workers aged 55 years and older, at 31 per cent, and the lowest share of workers aged less than 35 years, at 22.1 per cent, compared to all other industries.⁹
- The median age of workers in the agriculture, fisheries and forestry industry is 48 years.¹⁰
- The median age of Australia's sheep, beef and grain farmers is 51 years.¹¹ These are some of Australia's largest food export industries.
- Over half the agriculture, fisheries and forestry industry workforce, or 57 per cent, do not have any non-school qualifications compared with 39 per cent for the wider workforce.¹²
- Within the agriculture, fisheries and forestry industry only 9 per cent of the workforce have tertiary qualifications, and 25 per cent have a Certificate III or above, compared with 26 per cent and 30 per cent for the wider workforce respectively.¹³
- This relatively low level of training is despite 62 per cent of the workforce being classified as managers or professionals.¹⁴
- Workers in the rural sector have lower rates of broadband use in the home.¹⁵
- Workers in the agriculture, fisheries and forestry industry have the highest average full-time weekly hours at 51.3 hours, compared to an average of 41.1 hours for all industries.¹⁶
- Workers in the agriculture, fisheries and forestry industry had median weekly full-time earnings of \$776 compared with an average \$1000 for all industries.¹⁷

There are two distinct challenges currently facing Australia's agricultural sectors; a shortage of labour and the issue of that labour having the most appropriate skill set. Despite recent job losses in

⁹ Department of Education, Employment and Workplace Relations, Employment Outlook for Agriculture, Forestry and Fishing, Canberra, 2011

¹⁰ Department of Education, Employment and Workplace Relations, Employment Outlook for Agriculture, Forestry and Fishing, Canberra, 2011

¹¹ Department of Education, Employment and Workplace Relations, Employment Outlook for Agriculture, Forestry and Fishing, Canberra, 2011

¹² Australian Bureau of Statistics, 6227.0 - Education and Work, Australia, May 2010

¹³ Australian Bureau of Statistics, 6227.0 - Education and Work, Australia, May 2010

¹⁴ Australian Bureau of Statistics, 2006 Census of Population and Housing, Australia, 2006

¹⁵ Australian Bureau of Statistics, 8146.0.55.001 - Patterns of internet access in Australia, 2006

¹⁶ Department of Education, Employment and Workplace Relations, Employment Outlook for Agriculture, Forestry and Fishing, Canberra, 2011

¹⁷ Department of Education, Employment and Workplace Relations, Employment Outlook for Agriculture, Forestry and Fishing, Canberra, 2011

the industry, significant shortages in labour and skills are expected across virtually all regions, sectors and occupations of agriculture in the long term.¹⁸ Some of the reasons include:

- The high average age of the workforce suggests that employees exiting the workforce in the future are not being replaced by younger workers.
- The relative low level of formal qualifications suggests that the existing workforce may not have the right skill set to fully adapt to the future challenges facing the industry.
- Agriculture faces competition from other industries, such as mining, to retain its existing workforce and already the average weekly earnings and average hours worked suggests workers in the agriculture, fisheries and forestry industry work longer for less remuneration than their peers in other industries. The most recent workforce projections by DEEWR indicate the industry will begin to experience employment growth.

Impact of labour and skills shortages on agriculture

Australian agriculture will face many challenges in the next decades that will require new farming systems that use land, water, nutrients, pesticides and energy more efficiently and better risk management.¹⁹ These challenges will require the agricultural labour force to become increasingly responsive and adaptable to innovation.

However, in the context of this increasing need for adaptation and responsiveness, the Rural Research and Development Council believes that the low levels of formal education and training in the rural sector are leading to the risk of skill underdevelopment and reduced capacity to develop, adapt to and implement innovation.²⁰

The Rural Research and Development Council noted that previous parliamentary inquiries had found that the industry's ability to respond to the challenges of global competitiveness, productivity, adaptability and sustainable development depends largely on investments being made now in its people.²¹

The council's report highlighted the need to reinvigorate the rural research workforce:

It is difficult to estimate how much has been invested in the rural sector's research workforce or in ensuring that rural sector participants are equipped to adopt innovations generated by researchers, adapting them where necessary to suit their production or business systems. Reporting against the

¹⁸ Industries Development Committee Workforce, Training and Skills Working Group, 'Workforce, Training and Skills Issues in Agriculture', October 2009.

¹⁹ Ritman, K., Kelley, G., Bruce, S., Walcott, J., and Loch, A., Agricultural innovation – necessity is the mother of invention, Australian Bureau of Agricultural Economics and Sciences, March 2011.

²⁰ RRDC 2011, Rural Research and Development Council, National Strategic Rural Research and Development Investment Plan, 2011

²¹ See House of Representatives Standing Committee on Agriculture, Fisheries and Forestry 2007, Skills: Rural Australia's Need, Report of the inquiry into rural skills, training and research.

Rural Research and Development Priorities, the rural R&D Corporations declared an investment of about \$60 million in 2008–09 in skill improvement to undertake research and apply its findings.²²

Against a national trend of increasing award course completions, DEEWR reports a decline in agricultural, environmental and related studies between 2003 and 2008. This occurred despite growth in international student numbers, which masked a greater decline in completions by domestic students. The Council notes that this may be partially offset by strong growth in course completions in the natural and physical sciences.

The number of students completing PhDs and masters by research studies in agricultural, environmental and related areas is also low relative to the number of completions in other fields of education, although completions in the natural and physical sciences remain high.

These trends in undergraduate and postgraduate completions in the rural disciplines, together with evidence of the ageing profile of the academic workforce, underpin assessments that the demand for rural sector researchers is likely to outstrip supply in the coming decades (Allen Consulting Group 2010, ACDA 2008).

In July 2011, DAFF - Australian Bureau of Agricultural and Resource Economics and Sciences (DAFF-ABARES) released the report *Innovation and productivity in the Australian grains industry*.²³ The report included a study to test the influence of growers' innovative capacity on their adoption of innovation, and in turn, their productivity. The results of the study suggest that improving the innovative capacity among growers is likely to increase innovation adoption and enhance the ability of growers to realise productivity gains.

Innovative capacity is largely determined by farmers' characteristics—such as education, business acumen, financial resources, skilled labour and access to public and private extension services. As such, the study supports the need to strengthen education, skills and training in the agricultural sector. Further, the report notes that education and skills are likely to become more relevant to maintaining and improving farm productivity given the current labour market conditions, increasing sophistication of farm technology and the growing importance of integrated farm management practices. The report is available at www.abares.gov.au.

Impact on Australia's forestry industry

The forestry industry is a specific sector of agriculture where skill shortages are recognised as a national problem with potential long term and serious economic implications. Despite efforts by industry and governments over many years to address skills shortages, the issue remains prominent.²⁴

Forestry is an interdisciplinary vocation; it is therefore unsurprising that one of the difficulties associated with providing a detailed and accurate view of the skills shortages facing the wood and

²² Excludes investments in innovation skills by Australian Pork Limited, Australian Meat Processors Corporation and Australian Livestock Export Corporation. see Rural Research and Development Council, National Strategic Rural Research and Development Investment Plan, 2011, p39.

²³ Nossal, K., and Lim, K., *Innovation and productivity in the Australian grains industry*, Australian Bureau of Agricultural and Resource Economics and Sciences, July 2011.

²⁴ National Association of Forest Industries, *Wood and Paper Products Industry Skills Shortage Audit*, 2006

paper products industry is its size and diversity. Skill shortages in the industry have been identified in all areas, including both forestry specific skills, such as foresters and saw doctors, and industry wide generic skills such as electricians and plumbers.

Reasons for the skills and labour shortage have been identified as:

- negative perceptions about the industry in the community, the location of the industry in rural and regional locations,
- lack of availability of training providers in regional areas,
- strong labour and skills demand from competing industries such as mining,
- increased options to study more environmental courses (thus increasing the competition between forestry degrees and other land and resource based tertiary qualifications), and
- a move away from young people undertaking apprenticeships.

Further information from the *Forest Works 2011 Industry Skills Scan* and the *National Association of Forest Industries' 2006 Wood and Paper Products Industry Skills Shortage Audit* suggests:

- A skilled and educated forestry workforce contributes to the sustainability and profitability of the forest industry. Long term skills shortages in any or all areas of the industry have the potential to impact on the profitability of businesses and the industry as a whole. In the long term this will result in the industry being less attractive as an industry choice thus exacerbating and feeding back into the problem of long term skill shortages.
- Increasing the number of professional staff leads to more sophisticated management practices, increased likelihood of technological improvement and business innovation and improved attraction of the industry to new members, while increasing the number of trade based staff leads to decreased downtime in mills and faster technological initiation. Therefore an increase in professionally skilled staff coupled with an increase in trade skilled staff results in a more efficient and expansive business, and thus a more productive, profitable and sustainable industry.

The Australian Government delivered \$930,000 in funding for the construction of a Forestry Industry Database as part of its 2007 election commitments, with a further \$70,000 contracted to the former Bureau of Rural Sciences (now DAFF-ABARES) to produce wood flow statistics to allow forecasting in the completed database. The database identifies current skills and training and needs; future skills and training gaps; training providers; knowledge gaps; areas of future industry growth; and numerous other socio-economic factors relating to skills and training. In May 2011, DAFF launched the database, which provides a centralised, publicly available platform for information associated with the forest industry in terms of employment numbers and employee characteristics, skills and training information and recruitment and retention data.

In 2008 a further \$1 million was contributed by the Australian Government for the establishment of the Industry Skills Council, ForestWorks. This initiative was developed to build the skill base and capacity of the forest industries workforce, provide forest industries with direct input to National Skills Reporting, which informs government and the Vocational Education and Training sector of future skills needs, and to enhance monitoring of the effectiveness of forest and forest product industry training packages.

Impact on Australia's fisheries industry

According to the Fisheries Research and Development Corporation there remains a wide gap in the information needed for regional employment and in the skills, education and workforce development. This gap extends to a lack of knowledge about demographic trends affecting employment, demographic profiles of people employed, and certainty around the aggregate number of people actively involved in the industry.

DAFF and agricultural education and training

Whilst DAFF does not have policy responsibility for agricultural higher education and skills training, the department would like to bring several related initiatives to the committee's attention.

Primary Industries Ministerial Council

In 2008, the Industries Development Committee, under the Primary Industries Standing Committee created a working group to identify and recommend strategies to facilitate a coordinated and collaborative approach across government and industry to address the major workforce, skills and training issues affecting primary industries. In October 2009, the working group provided the former Primary Industries Ministerial Council (PIMC) with its final report, *Workforce, Training and Skills Issues in Agriculture*. The report can be accessed at www.daff.gov.au. In October 2011, PIMC met for the last time, having been superseded by the Standing Council on Primary Industries (SCoPI).

As part of its report the working group conducted a stocktake of current and past workforce and skills and training initiatives in the agriculture industry. The aim of the stocktake was to help identify options for increasing stakeholder awareness of these initiatives, identify areas for collaboration and coordination across government and industry and inform the development and implementation of future workforce, skills and training programs.

In 2010, PIMC noted an environmental scan of industry, its skills and workforce development issues and how the national training system is responding. PIMC subsequently invited Agrifood Skills Australia to develop a *Regional Agrifood Skills and Workforce Development Strategy*. Agrifood Skills Australia is currently developing this strategy. The yearly environmental scan can be accessed at www.agrifoodskills.net.au.

Over its term PIMC considered skills and labour supply, including retaining and attracting young people as a key influence on agricultural productivity growth. Productivity has also been identified as a priority issue of national significance for SCoPI. As labour and skills are key drivers of productivity, SCoPI will have a continued interest in agricultural education and training.

FarmReady Reimbursement Grants

The Australian Government's FarmReady program aims to improve the capacity of primary producers to increase their self reliance and preparedness to adapt to the impacts of climate change through participation in targeted training activities.

Primary producers and wild game harvesters and Indigenous land managers are able to claim up to \$1500 per financial year to attend approved training courses, with funding also available to cover excess travel, accommodation and child care expenses. Primary producers, wild game harvesters

are required to contribute 35 per cent towards their training costs with FarmReady reimbursing the remaining 65 per cent up to a maximum of \$1500 per financial year. FarmReady was expanded from July 2011 to include support for agritourism and food tourism training. Funding for FarmReady ceases 30 June 2012.

Community Networks and Capacity Building Program

The Australian Government's Community Networks and Capacity Building (CNCB) program, a component of Australia's Farming Future, focuses on increasing the leadership and representative capacity of target groups to strengthen primary industry productivity and build rural, regional and remote community resilience to a changing climate. The target groups include women, young people, Indigenous Australians and people from culturally and linguistically diverse (CALD) backgrounds. Funding for CNCB ceases 30 June 2012.

CNCB grants have been used to provide a range of leadership and educational opportunities, such as:

- National Institute for Rural and Regional Australia – Funding to support and supervise honours level students looking at the links between community resilience and profitable, sustainable and competitive primary industries.
- Australian Institute of Company Directors – Funding to support Indigenous participants to attend the Residential Company Directors course and In-Boardroom training for Indigenous organisations in portfolio industries.
- Australian Council of Deans of Agriculture – Funding of \$80,000 to support the development of *CareerHarvest*, a web based agricultural career resource. The resource is aimed at increasing awareness of agricultural careers and educational opportunities including at a university level where there is a recognised shortfall of graduates.
- Rural Industries Research and Development Corporation – Funding for the Investing in Youth Undergraduate Scholarship Program, assisting participants to define and commit to a career in agriculture.
- Australian Rural Leadership Foundation – Funding to support Indigenous, CALD and women participants to undertake the Australian Rural Leadership Program.
- Primary Industries Education Foundation (PIEF) – Four consecutive annual membership funding grants of \$75 000 (GST excl), totalling \$300 000 (GST excl) from July 2008 to June 2012. Annual membership funds are used to assist PIEF in meeting their objectives of facilitating educational initiatives in schools nationwide to encourage awareness and interest in Australia's primary industries.
- PIEF has also received \$100 000 (GST excl) for a project to support school students and teachers to incorporate and enhance primary industry considerations into the new national curriculum. Completed in April 2011, this project drew on PIEF's operational capacity, resources, and knowledge base in the education sector to encourage primary industry career pathways. The project sought to increase the students' understanding of the role primary industries play in food and fibre production, environmental management, and adaptation to climate change.

Rural Research and Development Corporations

In addition to the work of the department, the Rural Research and Development Corporations recognise the links between productivity and skills. Activities supported by the Rural Research and Development Corporations include post-graduate scholarships and rural leadership. Several research and development corporations are members of either PIEF or the Primary Industry Centre for Science Education (PICSE). These memberships facilitate linkages between industry and the bodies promoting agricultural education and careers.

Australian Animal Welfare Strategy

The Australian Animal Welfare Strategy (the Strategy) has been developed to provide both national and international communities with an appreciation of animal welfare arrangements in Australia. It also outlines the future direction and improvements to animal welfare in Australia.

A key goal of the Strategy is the effective communication, education and training across the whole community to promote an improved understanding of animal welfare.

The Animal Welfare Education and Training Working Group was convened under the Australian Animal Welfare Strategy in 2007. An early initiative of the working group was to engage consultants to undertake a comprehensive stocktake of Australian education and training in animal welfare. The stocktake was followed by an international benchmarking study of animal welfare education and training aimed at assessing Australia's performance against five key criteria. The study also identified how Australia could learn from a range of innovative international education and training programs. This stocktake is available at www.daff.gov.au.

The Animal Welfare Education and Training Working Group is also currently developing a framework for animal welfare education in Australia. Stage 1 involved collecting data from teachers active in classroom teaching regarding their perspectives on:

- the place for animal welfare education within the school curriculum, and
- the resources needed and the level of support required.

The Strategy and National Implementation Plan has been revised for the second phase of the program 2010-14 and endorsed nationally by the Primary Industries Ministerial Council in April 2011. A Committee has been appointed to oversee implementation of the Strategy. Stage 1, *Developing a Framework for Animal Welfare Education in Australia* is available at www.daff.gov.au.

Concluding comments

The department recognises that agricultural education and training continues to grow in importance. The department remains committed to working with key stakeholders, including the Primary Industries Education Foundation, the Primary Industry Centre for Science Education and the Australian Council of Deans of Agriculture, to increase awareness of agricultural careers and education and build Australia's capacity to meet labour requirements with skilled Australian

workers. The department will also continue to work with the states and territories through the Standing Council on Primary Industries in this area.