



Australian Government

Australian Government response to the
Senate Education, Employment and Workplace Relations
References Committee report:

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

October 2014

Acronyms

ACDA	Australian Council of Deans of Agriculture
ARCom	Australian Research Committee
AWPA	Australian Workforce and Productivity Agency
CSU	Charles Sturt University
COAG	Council of Australian Governments
EFTSL	equivalent full-time student load
ISC	Industry Skills Council
NBN	National Broadband Network
NEST	National Agribusiness Education Skills and Labour Taskforce
OLT	Office for Learning and Teaching
PICSE	Primary Industry Centre for Science Education
PIEF	Primary Industries Education Foundation
RDCs	research and development corporations
RD&E	National Primary Industries Research, Development and Extension Framework
RESJ	Regional Education, Skills and Jobs
RTOs	Registered Training Organisations
SCOTESE	Standing Council on Tertiary Education, Skills and Employment
VET	vocational education and training

Introduction

On 19 September 2011, the Senate Education, Employment and Workplace Relations References Committee (the Committee) was asked by the Senate to undertake an inquiry into the skills requirements of the agriculture and agribusiness sectors within Australia to consider the implications of skill shortages on the future workforce. The terms of reference for the inquiry are at Appendix A. The Committee received 69 public submissions from a broad range of stakeholders, demonstrating the significance of this issue for the sector. A summary of the submissions is at Appendix B. The Committee also conducted public hearings in Canberra, Perth and Melbourne in February, March and May 2012 respectively.

The Committee released its report *Inquiry into higher education and skills training to support agriculture and agribusiness in Australia* (the Report) on 21 June 2012. The Australian Government response to the Report recognises the structural changes in the agricultural and agribusiness sector over the past twenty years and values the important contribution the sector makes to Australia's economic growth. Structural adjustments resulting from globalisation, the recent decade of drought and ongoing challenges arising from a changing climate are resulting in the need for Australia's agricultural and agribusiness workforce to modernise and be more highly skilled.

Skills shortages in the agricultural and agribusiness sector have been exacerbated by Australia's ageing population and a booming resources sector which has, until recently, been absorbing much of the available labour in parts of regional Australia. In 2012 there was some indication that a few agricultural occupations may be starting to meet their workforce needs. The *Skills Shortages Australia 2012* report for the September 2012 quarter found that there were no shortages of agricultural scientists and consultants,¹ however these occupations account for only a small portion of the sector's workforce. Some employers surveyed indicated that there were not enough agricultural science graduates entering these occupations, for future demand. According to the Secretary of the Australian Council of Deans of Agriculture, there are as many as 4000 graduate level positions available for about 700 agriculture graduates across Australia.

Industry has a critical role in addressing the education, skills and training needs of the agricultural and agribusiness workforce. The Australian Government supports industry in this endeavour through investment in skills and workforce development, and in research infrastructure.

Investment in skills

Education and training play an important role in building a skilled agricultural and agribusiness workforce. Over the coming decades, this workforce will require higher level skills to operate new farming systems that use land, water, nutrients, pesticides and energy more efficiently, in order to remain competitive.

The Australian Government has made significant investments in education, skills and training through its investment in the national training system and in higher education. Under the Council of Australian Governments' National Partnership Agreement on Skills Reform, \$1.75 billion was committed over five years from 2012-13 through to 2016-17.² This funding is in addition to the \$1.4 billion per annum allocated to the States each year.³ Additionally, the Australian Government directly funds programs to achieve national growth in skills, qualifications and more effective workforce planning and development. Nationally, a third of Australian universities offer places in agriculture-related courses at the undergraduate and postgraduate levels, with most universities offering related courses in business and science

¹ Commonwealth Department of Employment, *Skills Shortages Australia 2012*

http://docs.employment.gov.au/system/files/doc/other/skillshortagesaustralia2012_13.pdf p 19

² Council of Australian Governments, *National Partnership Agreement on Skills Reform*,

http://www.federalfinancialrelations.gov.au/content/npa/skills/skills-reform/national_partnership.pdf p 10

³ http://www.budget.gov.au/2013-14/content/bp3/html/bp3_03_part_2a.htm

fields. In addition, agriculture units of study receive the highest rate of Australian Government funding (\$21 075 per Commonwealth supported place in 2013⁴).

AgriFood Skills Australia, as one of the 11 government established Industry Skills Councils is tasked to address the skills and training needs of the agricultural and agribusiness sector. AgriFood Skills Australia assists the agricultural sector to identify their training needs and to skill their workforce.

Under funding programs which are drawing to a close, agricultural enterprises were able to apply for government funding through AgriFood Skills Australia to match their own investment, in order to develop skills within their workforce. The skills and labour issues across the food supply chain were examined in the *Food and Beverage Workforce* study published in October 2013. It focused on ways to enhance Australia's food export performance and capitalise on growth opportunities within the region. A range of stakeholders across the sector have established strategies for developing workforce skills, however, the coverage is not consistent.

In August 2012, the Senate Select Committee on Australia's Food Processing Sector released a report *Inquiry into Australia's food processing sector*. The report made four recommendations relating to better matching skills with the needs of industry. The impending Australian Government response to that inquiry will consider these recommendations.

The Australian Government is developing the Agricultural Competitiveness White Paper which will set out a strategic approach to promote greater investment, provide for growth in jobs and improve profitability in the agriculture sector. The paper will consider issues including food security, improving farm gate returns, debt, drought management, supply chain competitiveness, investment, job creation, infrastructure, skills and training, research and development, regulatory effectiveness, and market access.

While the Australian Government will continue to provide assistance in addressing the challenges facing the agricultural and agribusiness sector through the national education and training systems, ultimately the sector's ability to attract new people will be an important factor in determining whether it remains competitive and profitable. This is a key challenge for agriculture and agribusiness.

The Australian Government acknowledges that a range of stakeholders, including the Primary Industries Education Foundation (PIEF), the Primary Industry Centre for Science Education (PICSE) and the Australian Council of Deans of Agriculture (ACDA) are increasing awareness of agricultural careers and education in agriculture.

There is strong collaboration amongst industry, education stakeholders and governments in ensuring a future workforce for the agricultural and agribusiness sector. A number of industry organisations and state governments have developed resources in this area. Cotton Australia has a range of educational resources available for use in classrooms to increase awareness of careers in the cotton industry. Queensland Government's Gateway to Industry Schools Program also raises the profile of agribusiness in schools.

The Australian Government is implementing new approaches to support businesses to build their competitiveness and efficiency through skilling their workers. The new Industry Skills Fund is available to small and medium businesses which are focusing on new areas of growth and wish to share funding responsibilities with the Government to skill up their workers. Businesses can seek assistance from the fund through the Department of Industry's Single Business Service and access other forms of business development support and information.

Investment in research infrastructure

Governments, universities, public research agencies and industry invest in research infrastructure that relates to agriculture.

⁴ Commonwealth Grant Scheme funding cluster amounts for 2013 - <http://www.innovation.gov.au/highereducation/ResourcesAndPublications/Resources/Documents/Rates2013.pdf>

Knowledge arising from research infrastructure, such as data, findings and new research techniques, feed into teaching resources and provide further career opportunities for agriculture science students.

Previous investment has enabled the creation of a national system of world-class, collaborative research infrastructure facilities and projects across a broad range of research domains, including animal and plant phenomics, animal and human health, and terrestrial and oceanic ecosystems.

Examples of research infrastructure that directly support future demand in agriculture and agribusiness in Australia:

Australian Plant Phenomics Facility

The Australian Government provided almost \$32 million to the Australian Plant Phenomics Facility. Part of the Australian Plant Phenomics Facility is located in the University of Adelaide's Waite Campus, which is a pre-eminent plant science research site in Australia and has 1 200 researchers.

The Plant Accelerator is an Australian first that will improve international efforts to cultivate sustainable crops, as well as providing a competitive edge for Australia's \$28 billion annual agricultural export industry. Ultimately, this facility will enable researchers to respond more quickly to market needs, and give Australia a head start in a field of research that will deliver practical benefits to primary producers.

A 'super greenhouse' features a series of 50 high-tech glasshouses and laboratories housing more than 1km of conveyor systems that will deliver plants automatically to state-of-the-art imaging, robotic and computing equipment. This will allow continual measurement of the physical attributes (the phenotype) of up to 160 000 plants a year. The accelerator mode of this facility will identify those varieties of plant that will be most successful in growth and function, and therefore reduce the time between the breeding of new varieties and their delivery to agricultural producers.

Charles Sturt University Food, Soil and Water Research Centre

The Australian Government provided \$5.93 million to support the establishment of the Food, Soil and Water Research Centre, located at Charles Sturt University's Port Macquarie campus, comprising a testing and research facility and a teaching facility.

The Centre will be a hub for local, national and international researchers in the area of food security, water security and soil science, forming a unique link between industry, commercial laboratory facilities and higher education through:

- testing of food, soil and water for local and broader regional industries including agriculture, aquaculture, local government and environmental organisation;
- enabling strategic, regional partnership through the development of links to higher level educational research and on-site course delivery;
- connecting the region with the research and education undertaken within the university's other laboratories and locations; and
- providing undergraduate and postgraduate students and researchers with access to real environments, business and industry to develop solutions that have immediacy for practice.

Summary

The Australian Government acknowledges the contribution that the agricultural and agribusiness sector makes to the community and to the economy. Industry has a central role in contributing to the education, skills and training needs of the agricultural and agribusiness workforce. The Australian Government supports industry in this undertaking by investing in skills to assist industry, and in research infrastructure within this sector.

Recommendation 1:

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

Response: Noted

The Australian Government notes that this is a matter for consideration by the two Councils.

Recommendation 2:

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

Response: Supported in principle

The Australian Government supports this recommendation in principle and notes the importance of the work already done by the Primary Industry Centre for Science Education (PICSE) and the Primary Industries Education Foundation (PIEF) and their role in the promotion of agriculture in primary and secondary schools.

The Australian Government has funded the University of Tasmania to support PICSE. PICSE has now established itself as an important body in collaborating with universities, regional communities and local primary industries, to attract students into tertiary science and to increase the number of skilled professionals in science based primary industries.

The Australian Curriculum provides opportunities for school students to learn about agriculture and its importance to Australia. The Australian Government encourages organisations to develop and promulgate resources to support the curriculum, such as PIEF's Primezone which provides teachers with access to a range of primary industries' education resources.

The Australian Government has committed \$2 million for a new program to help teachers better understand the products and processes associated with food and fibre production. As part of this program, information resources will be provided through a central website. Teachers will be able to participate in workshops to learn how these digital resources can be used in the classroom and linked to key parts of the curriculum.

Recommendation 3:

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

Response: Supported In Principle

The Australian Government currently provides a range of mechanisms through the national training system to provide consistency, transparency and quality for agricultural education, skills and training in Australia.

The Australian Government recognises the benefits of consistent high-quality, industry relevant training across Australia. The Government, in its leadership responsibilities for vocational education and training in Australia, will assess the need for refinements to training to meet the needs of the industry.

As part of the White Paper on Agricultural Competitiveness, the Australian Government will be considering the adequacy of current skills training and education requirements.

AgriFood Skills Australia, the national Industry Skills Council with responsibility for the agriculture sector works with industry and other stakeholders to develop and maintain nationally recognised and industry endorsed competencies, Skill Sets and qualifications for the sector. Skills Sets, in particular, provide flexibility to training organisations, businesses and individuals in selecting training to suit the needs of industry. Formal recognition of the training through a statement of attainment allows individuals to add other skills training at a later date to build a full qualification..

The Government's Indigenous Land Corporation provides training and employment opportunities for Indigenous Australians in the pastoral sector through its 14 agricultural businesses. During 2012-13 these businesses hosted 130 Indigenous people as trainees, offering Certificate I and 12-month Certificate II or III traineeships in rural skills including agriculture, meat processing, horticulture, conservation and land management, construction, tourism and hospitality.

Recommendation 4

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

Response: Supported in principle

The Australian Government supports this recommendation in principle but already consults the states and territories regularly on VET, as the national training system is jointly administered by the Commonwealth, states and territories. All jurisdictions recognise the importance of addressing the challenges of providing effective delivery of agricultural education to ensure an adequate supply of skilled workers in agriculture in regional areas.

While the Australian Government contributes significant funding to the VET sector, state and territory governments are largely responsible for the administration, delivery, operations, course offerings and budgetary decisions made in relation to their training systems.

Through national Industry Skills Councils the Australian Government funds the development and continuous improvement of nationally endorsed qualifications and units of competency which support industry in meeting the skills needs of their workforce. The Australian Government directly supports the Australian Apprenticeships system through the Australian Apprenticeships Incentives Program (AAIP) to encourage participation and retention of apprentices in the system. The AAIP provides incentives to employers who employ eligible Australian apprentices and thereby encourages people to enter into work while also acquiring skills as part of their employment.

Recommendation 5:

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

Response: Noted

The Australian Government previously funded 34 Regional Education, Skills and Jobs (RESJ) Coordinators to work in regional communities across Australia. They worked with community stakeholders, including Regional Development Australia Committees, to develop RESJ Plans that included strategies to improve participation and outcomes in education, training and employment in regional Australia. The RESJ Coordinators worked to ensure communities were aware of the opportunities available including facilitating linkages across Government programs.

Where, through consultation with local stakeholders, the agriculture sector in a region was identified as requiring support with its workforce and skill needs, the RESJ Coordinator worked with the sector and other local stakeholders, such as schools, training providers and employment services providers, to develop and implement appropriate strategies.

The RESJ Coordinator measure was funded for three years and ceased on 30 June 2014.

Recommendation 6:

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

Response: Noted

While the Australian Government notes this is a matter to be considered by the Australian Council of Deans of Agriculture (ACDA), the Minister for Industry will write to the Chair of ACDA to this effect.

The Australian Government notes there are existing frameworks that support a collaborative approach to research investment and knowledge transfer. These include the National Primary Industries Research, Development and Extension (RD&E) Framework and initiatives being undertaken by the Australian Research Committee (ARCom). The RD&E Framework is a partnership between the Australian, state and Northern Territory governments, the rural research and development corporations (RDCs), the Commonwealth Scientific and Industrial Research Organisation, the university sector and industry. It plays a major role in identifying priority RD&E requirements for the rural sector and ensuring allocation of the most effective and efficient RD&E capacity to address them. ACDA is a partner in the RD&E Framework, and a member of the RD&E Committee, which reports to the Standing Council on Primary Industries.

ARCom was established to provide integrated and strategic advice on future research investments, including in the areas of human capital, infrastructure and collaborative activities.

ARCom, chaired by Australia's Chief Scientist, will consider how to increase collaboration and coordination in Commonwealth rural RD&E investment. ARCom is exploring the level of coordination of Australian Government rural research and development investment and will advise on whether any improvements can be made in terms of more coordinated funding arrangements and priority-setting, opportunities for collaboration or increasing the focus on rural research.

The broader National Research Plan, released in November 2012, also outlines that ARCom will provide ongoing advice on improving linkages between the research sector and industry. It is likely that this work will have a bearing on, or provide direction to, efforts by ACDA to develop a collaboration framework to optimise research investment and improve knowledge transfer in agriculture and agribusiness research.

Recommendation 7:

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

Response: Not supported

The Australian Government does not support this recommendation. The Government has previously initiated a number of reviews to ensure that Australia's higher education system has the capacity to provide a highly skilled and adaptable workforce to meet future challenges; there has been a strong focus on the needs of regional universities.

The Australian Government is developing a White Paper on Agricultural Competitiveness, which will drive long-term agricultural policies and ensure Australia's agriculture sector remains a significant contributor to the national economy and local communities. The White Paper will take into account the analysis done for the National Food Plan, in the context of the Government's agriculture related priorities.

Higher Education

The current funding arrangements for universities provides for students to gain an education in order to become graduates who can enter occupations that the economy needs. The agricultural industry can work more closely with universities to encourage students to participate in courses that meet the needs of the agriculture labour market.

Nationally, more than one-third of Australian universities offer places in agriculture-related courses at the undergraduate and postgraduate levels, and Australia's universities play a critical role in developing skilled workers for the agricultural and agribusiness industries.

Learning and Teaching

The Office for Learning and Teaching (OLT) commissions work and provides grants and fellowships to academics and professional staff to enhance learning and teaching in higher education. The OLT has funded seven projects to improve learning and teaching within the discipline of agriculture. Projects include, universities and industry working together to establish national academic standards for agriculture, updating curriculum and teaching resources (e.g. soil science, plant breeding, veterinary science and entomology) and a national forestry education network. The OLT works with peak bodies to disseminate the outcomes of these projects and final reports are published on the website (www.olt.gov.au/resources).

Agricultural and Farm Studies

Agriculture units of study currently receive the highest rate of Government funding (\$21 273 per Commonwealth supported place in 2014). The maximum student contribution in 2014 for agriculture units of study is \$8 613 for one equivalent full-time student load (EFTSL) which is the second highest student contribution band. Combined funding per agriculture EFTSL for universities will be up to \$29 886 in 2014.

The Government announced major reforms to the funding of higher education in the 2014-15 Budget. These reforms will help to create a world class, sustainable higher education system. From 1 January 2016, all Tertiary Education Quality and Standards Agency (TEQSA) accredited higher education institutions will be able to choose to provide Commonwealth supported places (CSP) for their students. From 2016, the Government will also extend the demand driven funding system to include all higher education bachelor degrees, diplomas, advanced diplomas and associate degree courses. Australian students enrolling in these courses will be able to

access a CSP. In 2016, agriculture units of study will continue to receive the highest rate of government funding (\$18 067 per Commonwealth supported place).

From 1 January 2016, the maximum contribution amount for Australian students at higher education institutions will be removed. Universities and other higher education institutions will be able to determine the fees they charge Commonwealth supported students. The Higher Education Loan Program (HELP) ensures that all Australians are able to participate in higher education without the need to pay any upfront fees.

Students within the broad field of study – Agriculture, Environmental and Related Studies – may also pursue careers in agriculture and agribusiness. This category covers the fields of Agriculture, Horticulture and Viticulture, Forestry Studies, Fisheries Studies; and Environmental Studies. Data available for 2013 indicates that out of all broad fields of education, Agriculture, Environmental and related studies recorded the largest increase in applications (7.1 per cent) and the largest increase in offers (7.2 per cent).

Mathematics, Engineering and Science Report

Students who study mathematics, engineering and science may also enter a range of agricultural and agribusiness careers.

The *Mathematics, Engineering and Science in the National Interest* report was released in May 2012 and made 17 recommendations regarding ways to encourage greater participation in mathematics, statistics and science at university. The recommendations focused on schools, where most students identify their future study options, and teachers, who have the greatest influence on the choices students make about their careers. The recommendations fall under five themes: Inspirational teaching; Inspired school leadership; Teaching techniques; Gender issues; and Scientific literacy.

In response, a \$54 million package of programs addressing these five themes was provided, including the appointment of a National Maths and Science Education and Industry Adviser, located within the Office of the Chief Scientist, to champion the role of mathematics, statistics, science and engineering across education and industry.

Regional Higher Education

The Review of Regional Loading examined the cost of providing quality teaching in regional Australia and as a result the regional loading was increased by \$110 million to help overcome the higher costs of regional campuses. Additionally, the University of New England recently received \$29 million for an Integrated Agricultural Education Project that will support construction of an agricultural education building, a farm education facility and an animal husbandry facility.

Pathways from VET to Higher Education

Opportunities exist for students to enter higher education agriculture and agribusiness courses through a variety of pathways, including articulation from VET programs. A number of universities offering courses in agriculture and agribusiness have pathways from VET to higher education. For example, Charles Sturt University (CSU) has an articulation program with the Sunraysia Institute of Technical and Further Education (TAFE) which creates pathways from Diploma courses in Conservation and Land Management, Rural Business Management, and Horticulture into a variety of CSU degrees. Other providers, such as the University of Western Australia, have no formal credit transfer or articulation pathways into their agriculture degree program, but encourage students to apply for advanced standing, on the basis of prior study, once they have received the offer of a place. The University of Tasmania also recognises successful TAFE/VET studies as an important entry pathway to higher education study.

CSU has also received funding to collaborate with the Goulburn Ovens Institute of TAFE (Wangaratta, Victoria) to establish a Regional University Centre to service the higher education

market of that region. The Centre functions as an on-campus and mixed-mode delivery point for selected CSU degree programs, with a focus on agriculture and animal production.

Recommendation 8:

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

Response: Supported in principle

The Australian Government acknowledges the importance of extension and adoption of research outcomes and that extension arrangements are different for different industries and regions of Australia.

The RDCs are ensuring that the adoption of research outputs is treated as an integral part of the research and development planning and delivery process. These include requirements for the RDCs to develop extension plans, consider pathways to adoption of each research project and report on extension activities.

Extension of research outcomes is also a major focus of the Research, Development and Extension (RD&E) Framework. The Australian Government will continue working with other parties to the RD&E Framework to ensure extension and adoption priorities are adequately understood and addressed during implementation of sectoral and cross-sectoral strategies under the framework.

Recommendation 9

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

Response: Supported In Principle

The Australian Government recognises the value of working collaboratively with industry to deal with the challenges impacting the agricultural and agribusiness sector into the future.

The Minister for Agriculture established an Agricultural Industry Advisory Council in January 2014 to provide advice on issues and challenges facing agriculture and to enhance consultations with the sector.

The Minister for Industry, as part of developing reform options for vocational education and training, has engaged with many industry sectors, including agriculture.

The National Farmers' Federation also facilitates the National Agribusiness Education, Skills and Labour Taskforce (NEST), which was formed in 2012, and brings representatives of the Australian Government and the agriculture industry.

Recommendation 10

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

Response: Noted

The Australian Government notes the recommendation, and in light of the response to Recommendation 9, acknowledges the current consultation processes with a wide range of agricultural and agribusiness stakeholders, along with the establishment of NEST in September 2012.

Recommendation 11

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

Response: Noted

The Australian Government notes the recommendation, in light of the response to Recommendation 9. If industry elects to change its representational arrangements and establish a new body, the work program would be a matter for that body.