



REGIONAL UNIVERSITIES NETWORK

SUBMISSION to:

Senate Education, Employment and Workplace Relations Committee
Inquiry into higher education and skills training to support future demand in agriculture and agribusiness in Australia

Introduction

The Regional Universities Network is pleased to provide a submission to this important Senate Inquiry and would welcome an opportunity to appear before the Committee.

The Network is aware of the parlous state of agricultural education and skills training across the nation: enrolments are falling; programs are increasingly city-based; and graduates are not work-ready¹. When combined with an ageing agricultural workforce, a contracting and outmoded skill base, climate change, and global food shortages, the need for practical, accessible and targeted agricultural education programs has never been more urgent.

Regional Universities Network

Background

The Regional Universities Network was established in October 2011. The foundation members of the Network are:

- CQUniversity
- Southern Cross University
- University of Ballarat
- University of New England
- University of Southern Queensland
- University of the Sunshine Coast.

The objectives of the Network are to:

1. To provide policy advice to government, particularly with regard to tertiary education and regional development.
2. To strengthen and promote the contributions of regional universities to regional and national development.
3. To build institutional capacity and sustainability through the sharing of best practice in educational delivery, training, research and organisational management, particularly with reference to regional contexts.

¹ See, for example, P. McSweeney and J. Rayner, "Developments in Australasian agricultural and related education", *Journal of Higher Education Policy and Management*, 33 (4), 2011, 415-25.

Contributions

General

Based on the 2009 Higher Education Student Statistical Collection, the Regional Universities Network accounts for:

- Total student enrolments of more than 110,000²
- More than one in three undergraduate university students from regional and remote communities
- 15% of undergraduate university Indigenous student enrolments
- 16% of undergraduate university low SES student enrolments
- Competitive research funding of \$44 million.

Agriculture and agribusiness

In 2009, our members enrolled over 5,500 domestic higher education students in the broad fields of 'Agriculture, Environment and Related Studies' and 'Natural and Physical Sciences', including a number of post-graduate students enrolled in research masters and doctoral topics relevant to agriculture and agribusiness in Australia.

Collectively, the Network members offer learning programs across the Australian Qualifications Framework (AQF) in a range of agriculture and allied fields. The fields offered include: agribusiness; agricultural and resource economics; agriculture; horticulture; forestry; animal science; zoology; rural science; environmental science and management; natural resource management; biomedical science and biotechnology; marine science and ecology; aquaculture; climate change adaptation; wetlands management; applied biology; and, sustainability.

Our members also have research strengths in highly relevant fields, including: agricultural and resource economics; agronomy and soil science; animal science; environmental science and natural resource management; genetics; forestry science; plant science; water science; aquaculture; and, geoscience.

Response to Terms of Reference

Adequacy of funding and priority given by governments

Our member universities endeavor to provide a broad offering of courses to ensure that their communities have access to the knowledge and skills required to support regional social, economic, cultural and intellectual development.

With regional Australia at the heart of Australia's food and water security futures, environmental management issues and the country's emerging mineral and natural resource developments, the Network recognises the importance of providing access to agriculture and related fields of study. Network members also have strong linkages into regional industries and resources, and are well positioned to address issues and engage with stakeholders through a variety of research and training programs.

In 2009, our members had almost 2,000 higher education students enrolled in the 'Agriculture, Environment and Related Studies' broad field of education and they have systematically invested in related program development, infrastructure and research over a long period of time.

² Includes vocational education and training enrolments for the dual-sector University of Ballarat

A number of funding pressures, however, are acting to create challenges for the delivery by regional universities of agriculture and related programs:

1. The cost of program delivery in the agriculture and related fields is increasing.
2. Regional universities face additional cost pressures, compared with metropolitan universities. These cost pressures are associated with:
 - Higher charges associated with operations, infrastructure and delivery, in particular transport costs.
 - The critical need for school outreach programs, covering large geographic areas, to raise the educational aspirations of regional students. According to the 2006 Census data, 19% of Australians living in capital cities had attained a Bachelor degree or above, compared with only 10% of Australians living in regional areas.
 - The provision of academic support services to assist the special needs of regional students, who are more likely than their metropolitan peers to be Indigenous, from a low SES background and 'first to university' in their families. For example, in 2009, 29% of domestic undergraduate students enrolled in our member universities were classified as low SES, compared with only 15% in other public universities.
 - The higher take-up of part-time studies in regional areas, which adds to delivery costs and also places a strain on the financial viability of some courses of study.
 - 'Thin markets' in some fields of education, also placing strains on course viability.
 - The expense, for both universities and students, in providing practical and field-based placements (e.g., travel and accommodation costs) in courses of study in agriculture and related disciplines.

While the regional loading paid by the Federal Government to most, but not all, of our member universities provides partial compensation for these increased costs, the shared view of our members is that the current funding model does not respond to the distinctive and individual needs of regional universities or to their role as key drivers of regional social and economic development.

3. The establishment costs associated with introducing new undergraduate and postgraduate educational programs are a significant barrier for those regional universities that may have a desire to respond to the current education and skills gap in agriculture and agribusiness. Establishment costs include: land; purpose-built education buildings and facilities; curriculum development; and, student accommodation.

The Expert Panel appointed by the Federal Government to undertake its Higher Education Base Funding Review has recently delivered its report to the Minister for Education, Employment and Workplace Relations. Any new funding model emerging from the Review will have a profound impact on the future of regional higher education provision for decades to come. The right funding drivers will help agriculture education to thrive in regional Australia and the wrong funding drivers will speed its decline.

Reasons and impacts of the decline in agricultural and related educational facilities

In keeping with the wider agricultural sector, the Regional Universities Network acknowledges that agricultural industry needs are not matched by student demand for training places. While data vary, Australia's universities, TAFE institutes and colleges now produce just 800 graduates each year for an annual job market of between 2,000 (McSweeney and Rayner, p.416) and 5,000 vacancies (*Weekly Times*, 14 April 2010). Whichever baseline figure is used, the shortfall remains considerable.

While the national picture reflects a decline in the availability and student take-up of agriculture and related studies, we highlight that our members have sought to invest in and sustain agriculture and related fields wherever possible.

The decline in agricultural and related educational facilities is essentially due to declining student demand for agricultural courses, which in turn has led to a decline in the viability of courses. There is a limit to which universities, particularly those in regional locations, can cross-subsidise courses with low enrolments. Over the past decades much of the decline has occurred in the larger urban universities, as these have traditionally offered many of the historic agricultural programs, but changing demographic trends have made those programs less attractive. Unfortunately there has been no corresponding investment in regional universities to replace programs in areas where the skills shortages and networks are located.

Weak student demand can be linked to negative perceptions of the agricultural industry and the career and remuneration opportunities it can offer compared with other industry sectors, including the booming resources sector.

Solutions to addressing the widening gap between labour supply and demand

Integrated regional solutions

The widening gap between agricultural labour supply and demand is complex, requiring a national response, coordinated across levels of government and across a range of government portfolios.

The national framework needs to empower individual regions to develop integrated strategies that address the full range of issues relevant to: developing agricultural industries; boosting the agricultural labour force; raising the standards of education of the workforce; and, investing in research to promote innovation and productivity.

The network of Regional Development Australia (RDA) Committees provides a strategic framework for economic development in each region and this network should play a central role in bringing relevant stakeholders together, including agricultural enterprises and regional universities, to shape agriculture and agribusiness strategies aligned with the strengths and opportunities of each region.

There is considerable potential for RDA Committees and regional universities to work in close partnership to progress strategies of this nature. The University of Southern Queensland, for example, has recently entered into a Memorandum of Understanding with RDA Darling Downs and South-West Queensland to improve participation in tertiary education programs that address the region's skills requirements.

Facilitating better access to agricultural education for regional Australians

A recent study by the Australian Council for Educational Research (ACER)³ concluded:

Students who move from regional areas to urban areas in order to undertake a higher education are unlikely to return, while those who are able to remain in regional areas while they are studying are likely to stay. This is a powerful testament to the fundamental role that regional HEIs play in the skilling of regional communities. (p 6)

The ACER study⁴ also made the following findings:

Students who are enrolled at all but six regional HEIs are less likely than those who are enrolled at metropolitan HEIs to be enrolled in the fields of natural and physical sciences, engineering or agriculture and environment. (p 11)

Those who have studied agriculture and environmental studies at regional HEIs are much less likely than their metropolitan counterparts to move on to further study in the same area, with a large proportion instead going on to further studies in education. (p 11)

³ Australian Council for Educational Research (2011) *Higher education & community benefits: The role of regional provision*, Research Briefing, Vol 1, No 5, September 2011

⁴ Australian Council for Educational Research (2010) *Australian Regional Higher Education: Student Characteristics and Experiences*, Submitted to the Department of Education, Employment and Workplace Relations.

With respect to further study, the ACER authors speculated that the lower percentage of agriculture graduates going on to further studies in the same field may reflect a perceived lack of employment opportunities in the region and/or lack of availability of graduate level studies in regional areas.

These findings point to the importance of government policy in creating favourable conditions for regional employment growth in agriculture and related sectors and supporting the establishment and ongoing delivery, *within regional Australia*, of both undergraduate and postgraduate agricultural and agribusiness courses.

Building aspiration

Changing perceptions of career opportunities in agriculture, and therefore building aspiration for agricultural education and related sciences, is an essential ingredient in reshaping and reorienting relevant educational agricultural programs across Australia.

The Regional Universities Network supports an increased emphasis on:

- Exposure to agricultural topics and careers in the school curriculum, with an emphasis on the role of agriculture in the broader national and global context and its critical importance in addressing global issues such as food shortages and security, health and climate change.
- Provision of funding to enable regional schools, TAFE Institutes and universities to work collaboratively to increase student interest in undertaking VET or higher education studies in agriculture, agribusiness and related fields of study.

Embedding agricultural applications in related educational programs

The skill needs of the agriculture sector have changed, with a growing reliance on high-end science and technology in fields such as genetics, geo-spatial science, statistics and environmental systems. While generalist agriculture degrees provide coverage of these topics, the sector increasingly relies on the knowledge and skills of specialists in these fields. The agriculture sector also continues to rely on specialist knowledge in fields such as economics, supply chain management and regional development.

In addition to providing agriculture courses, there is a need to embed agricultural applications into related programs of study to produce graduates with the capacity and interest to apply their specialist skills and knowledge within the agriculture sector. Given their proximity to agricultural enterprises and associated networks, regional universities are particularly well suited to achieving this.

Educational pathways

While there is a wide gap between capital city and regional populations in higher education attainment levels, such a gap does not exist for vocational education and training. With the wide regional coverage provided by the TAFE system and the range of available VET-level qualifications in agriculture and related skill areas, enhanced pathways between VET and university courses are vitally important to addressing the current gap between agricultural labour supply and demand.

Our Network members are all working closely with their regional TAFEs and other education providers to strengthen pathways and articulation arrangements. This is particularly important for encouraging Indigenous and low SES students to undertake higher education qualifications.

The University of Ballarat is a dual-sector institution and offers agriculture and related programs of study across the AQF. Plans for a merger between CQUniversity and the Central Queensland Institute of TAFE will open up new opportunities for the design of regionally specific programs suited to relevant agricultural sub-sectors.

Targeted funding or incentives to support strong alliances to jointly design agricultural programs and pathways that directly address regional and sub-regional agricultural sector needs would be beneficial.

Flexible delivery options

A number of our Network member universities are national leaders in the provision of distance education. Given the geographically dispersed nature of the agricultural workforce, national solutions to the growing skills gap need to include the provision of flexible learning options.

In addition, there is scope for greater collaboration between universities in the delivery of agriculture, agribusiness and related fields of study. Collaborative approaches would enable individual institutions to sustain and develop specific areas of specialisation and pool resources and expertise to offer leading edge programs of study. Seed funding or incentives to support and encourage such collaborations would facilitate the achievement of outcomes.

Student accommodation

While flexible learning is an important part of the mix in addressing skill shortages, experience and observations of industry professionals indicate that effective agricultural education also requires on-site and practical farm and agricultural teaching and learning. The capacity of regional universities to offer these experiences to students is heavily reliant on the availability of student accommodation. Our members are all experiencing shortages of student accommodation and there is currently no targeted funding programs to assist. While the National Rental Affordability Scheme has provided limited assistance to some regional universities, the Scheme requires institutions to provide matching funding, relies on a business model not well suited to the regional context and has not impacted significantly on unmet demand.

Impacts of shortages on agricultural research

Declining higher education enrolments in agriculture and agribusiness, along with the retirement peak for the 'baby boomer' generation of academics, will act to seriously deplete the academic workforce in these fields. Research and postgraduate training will be weakened as a result, which may lead to a further reduction in the attractiveness of relevant fields of education to prospective students, thus creating a 'vicious circle' of decline.

Regional universities need to build and sustain strengths in targeted areas of agricultural research if they are to attract talented academics, both nationally and internationally, to underpin vibrant and attractive educational programs in agriculture and related fields. The smaller scale of many regional universities, however, constrains their capacity to build sustainable research concentrations within their own resources.

The Productivity Commission's Inquiry into the Rural Research and Development Corporations⁵ emphasised the need for an appropriate mix of basic and applied research in driving growth and productivity gains in the agriculture sector and for a greater focus on the translation and adoption of research findings. With their proximity to agricultural production and relationships with industry, regional universities have a particularly strong role to play in the conduct of applied research, and in producing industry engaged research graduates with an understanding of how knowledge adoption works in practice.

⁵ Productivity Commission 2011, *Rural Research and Development Corporations*, Report No. 52, Final Inquiry Report, Canberra.

The Collaborative Research Networks program offered through the Department of Innovation, Industry, Science and Research, supports regional universities to establish partnerships with more research-intensive universities in areas of common interest. The provision of a similar program, specifically targeting agriculture and agribusiness, would create a strong incentive for national research collaboration, bringing together basic and applied research capabilities. It makes good sense to build applied agricultural research capacity where it is most needed – that is, in regional Australia.

State governments also have an opportunity to invest in regionally targeted research to the benefit of regional and State economies. Examples of innovative research partnerships between our member universities, State governments and other key stakeholders include:

- The Smart Forests Alliance Queensland is a partnership between the Queensland Government, University of the Sunshine Coast, CSIRO, Northern Territory Department of Primary Industry, Fisheries and Mines and private partners, to speed up production of fast-growing hardwood trees for forest plantations and carbon sequestration. The aim is to leapfrog Queensland to the forefront of tropical and subtropical forest biotechnology and attract the booming plantation investment sector to Queensland.
- The Primary Industries Innovation Centre (PIIC) is a joint venture partnership between the NSW Department of Primary Industries and the University of New England (UNE) to boost primary industries research, extension and training outcomes with a special focus on the New England - North West Region of NSW.

Conclusion and Recommendations

The Regional Universities Network, and its members, are well placed and committed to working in close partnership with Regional Development Australia, all levels of government and the agricultural sector to address the urgent need for action to close current and emerging gaps in agricultural education, skills training and research.

In our submission, we have highlighted a number of barriers that inhibit our members from achieving their full potential contribution. We have also identified a number of opportunities for strengthening agriculture higher education provision.

In brief, the Regional Universities Network recommends that:

1. The federal government's response to the Higher Education Base Funding Review acknowledge and address the additional cost pressures experienced by regional universities in meeting regional skill needs.
2. Regional Development Australia Committees, regional universities and other stakeholders work in close partnership to develop integrated regional strategies for agriculture sector development and associated education requirements.
3. A Higher Education Agriculture Innovation Fund be established to facilitate:
 - The establishment of new undergraduate and postgraduate coursework programs in agriculture, agribusiness and related fields aligned with regional strategies for sector development
 - Collaboration between regional universities and regional vocational education and training providers to jointly design educational programs and pathways
 - Flexible delivery options
 - Collaboration between universities to jointly design and deliver agriculture and agribusiness, building on their individual disciplinary specialisations
 - The embedding of agricultural applications into educational programs in related fields of study (e.g. genetics, statistics, environmental systems, business).
4. A special round of the Collaborative Research Networks program be initiated with a focus on agriculture and agribusiness.

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