



Australian Government
Grains Research and Development Corporation



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Mr Tim Watling (Secretary)
Senate Standing Committee on Education, Employment and Workplace Relations
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**HIGHER EDUCATION AND SKILLS TRAINING TO SUPPORT FUTURE DEMAND IN
AGRICULTURE AND AGRIBUSINESS IN AUSTRALIA**

Dear Mr Watling

The Grains Research and Development Corporation (GRDC) is pleased to provide input to the Senate Standing Committee on Education, Employment and Workplace Relations inquiry into the adequacy of current education and training support to meet the needs of agriculture in Australia.

The GRDC is a statutory authority established to plan and invest in research, development and extension (RD&E) activities for the Australian grains industry. Australian grain growers pay a 1% levy on the farm gate value of production; this levy is matched by the Australian government up to 0.5% of the gross value of production. This partnership between industry and government enables GRDC to invest in research, development and extension that supports production by Australian grain growers to meet global grain market requirements and importantly to contribute to global food security.

The positive trend in broadacre productivity has been widely attributed to the willingness of the grains industry to adopt the outcomes of research and development. That is, the Australian grains industry has a track record of being highly responsive to knowledge transfer and education in broad terms.

In 2010-11, the GRDC invested around \$2.3 million in targeted capacity building activities for the grains industry through provision of a range of leadership and training awards as well as scholarships. Funding included but was not limited to the following:

- \$1.35 million for 67 grains industry post graduate research scholarships
- \$100,000 for 10 undergraduate honours scholarships
- \$100,000 for the Australian Rural Leadership Foundation
- \$51,000 for 17 agricultural training awards
- \$40,000 for 10 travel awards
- \$30,000 for 3 indigenous training awards
- \$245,500 for Nuffield Australia farming scholarships
- \$150,000 for the Primary Industry Centre for Science Education (PICSE)

In addition there are many post graduate students (PhDs) employed directly in GRDC supported projects and there is further considerable support through on the job training, workshops and conferences associated with mainstream research projects.

Specific GRDC comments in relation to the terms of reference are presented below.

TOR 1 – The adequacy of funding and priority given by governments at the federal, state and territory level to agriculture and agribusiness higher education and vocational education and training

The consequences of a decline in agricultural productivity growth have been well articulated. Factors contributing to this include an increasingly variable climate, continuing reduction in arable land, higher input costs, less water and evolving pests and diseases. However much of the slowdown in productivity growth can be attributed to declining rates of public and private investment in agricultural research, development and extension (R,D&E), including investment in human capital.

We cannot deliver on our objective of a viable and sustainable grain industry without a highly motivated and skilled workforce. The decline in human resources devoted to agricultural R,D&E is of considerable concern to the GRDC.

Over the preceding five years the GRDC has commissioned several reports and audits to identify the training and education gaps relevant to address the challenges facing the Australian grains industry. Interestingly whilst the reports highlight lack of funding as an issue, the major finding has been the lack of leadership in the provision of education and training options and the “invisibility of agriculture” in Australia:

- the training and education requirements of the grains industry are poorly defined and poorly communicated to training providers
- there is a significant range of opportunities on offer, however, activities lack coordination and leadership, resulting in inevitable duplication and fragmentation. Some of this is justifiable given the differences in R,D&E focus and requirements of different industries. However improvements could be made.

The decline in enrolments and interest in agriculture as an exciting and viable career option is a major concern. However of greater concern is the lack of priority given to agriculture and agribusiness by both federal, state and territory governments.

For example sustained reduction in the resources and focus by state and territory governments on rural R&D, particularly in the area of extension and adoption, has resulted in pressure on the Rural R&D Corporations (RDCs) to fill the gap. As a result, RDCs are increasingly funding the adoption of R&D through their strong links with industry. This steady decline in state government extension services is having enduring impacts on the effectiveness of adoption of the outcomes of R,D&E on-farm.

Within the research arena, the process used to identify priority areas for research funding rewards publication volume in international peer-reviewed journals at the expense of applied fields of research such as agricultural research, development and extension (RD&E)—which are placed at a significant disadvantage. In response, Universities focus on areas most likely to generate high impact papers with little incentive to address those areas of greatest national significance in underpinning ongoing productivity.

TOR 2 – The reasons and impacts of the decline in agricultural and related educational facilities

To compete and succeed internationally the Australian grains industry will need to continue to access a highly skilled and motivated workforce, including growers, advisers, researchers and managers. The Australian grains industry faces several critical challenges:

- although a highly productive and efficient industry it lacks broad urban community support
- agriculture industries are not perceived as providing exciting and attractive career prospects for potential students
- relevant career paths are not readily visible, this is particularly the case with students from or based in urban areas
- Australia is an urbanised society, few people make the link between the grains industry and food, health and wellbeing
- there is an insufficient number of appropriately skilled researchers and advisers being trained to replace the current generation, this is compounded by the large number of current researchers and advisers reaching retirement age
- substantial difficulties in attracting high calibre students into science and agriculture in general
- a whole of industry approach to building skills and capacity, including infrastructure for the grains industry is lacking
- competing industries such as mining means access to appropriately trained labour is constrained.

The impacts of the lack of appropriately trained and skilled researchers, advisers, growers and managers will be significant in the coming years. Indeed, the GRDC is seeing the impacts of this in particular R&D areas now, particularly in field based disciplines.

TOR 3 – Solutions to address the widening gap between skilled agricultural labour supply and demand

The GRDC recognises that it cannot on its own address human capacity issues for the Australian grains industry. There are numerous organisations and institutions whose primary role is to provide training and development services and opportunities for students, growers, researchers and advisers. Having said that we believe we have a clear role in working with both the public and private sectors in:

- developing consistent and aligned industry leadership
- operating on a demand responsive - not a supply driven basis, to clearly articulate future needs
- actively addressing the contraction of rural infrastructure. The GRDC is investing \$20.6M over five years in the Australian Export Grains Innovation Centre (AEGIC) with matching funding from the Department of Agriculture and Food, WA (DAFWA) and a further \$19M will be invested by the GRDC in infrastructure with the University of Sydney at Narrabri
- recognising agricultural science and research as critical inputs to developing long term strategic capacity
- developing a problem solving and cooperative industry culture
- managing resources to best effect and reducing duplication and fragmentation
- understanding and applying new approaches and technologies
- working with other industries to address competing skills requirements
- education and training will need to be increasingly accessible and portable

There have been recent efforts by the Australian grains industry as part of the broader agricultural sector to identify important capability areas. Through the Primary Industries Ministerial Council (PIMC), the States and Northern Territory, Rural R&D Corporations, CSIRO and universities jointly developed the National Primary Industries Research, Development and Extension (RD&E) Framework to encourage

greater collaboration and promote continuous improvement in the investment of RD&E resources nationally.

When the Framework is fully implemented, it is expected that:

- research capability will become more collaborative, specialised, have larger critical mass and will be less fragmented across the nation. Efficiency and effectiveness of RD&E will be markedly improved overall, although some additional costs could be incurred providing national linkages and to support delivery of regional development and local extension.
- agencies will retain and build capability in fields strategically important to their jurisdictions and industries. At the same time, it is expected agencies will collaborate with others to provide for a more comprehensive national research capability.
- states will decide what their research role is in specific sectors.

In the National Grains Industry RD&E Strategy, which was released in November 2010¹, future infrastructure needs to support innovation to benefit the grains industry and the broader community are considered, resulting in recognition of National Centres of Research Capability.

In light of the Framework, the Committee may like to consider whether additional public investment in education and training capability areas already identified through the PIMC process will deliver significant benefits to Australian agriculture in the long run.

TOR 4 – The impacts of any shortage on agricultural research

In its submission on the Rural R&D Council's draft National Strategic Rural R&D Investment Plan, the Council of Rural Research and Development Corporations noted research commissioned by the Australian Council of Deans of Agriculture (ACDA)² concluded that there were fewer than 800 agricultural science graduates each year to meet a job market demand of 2000. A separate report commissioned by the ACDA³ concluded that there has been a 30% decline in agricultural graduate completions at Australian universities for the period 2001-2006.

There is a chronic shortage of agricultural researchers, teaching academics, rural leaders and skilled workers in the primary industries sector. The impacts of this shortage will be serious. Having access to an appropriately skilled pool of people is essential if Australia wishes to continue to produce its own food and meet the challenges of global food security.

Research and development will only impact productivity if the results of these activities are effectively communicated and adopted. This in itself requires the generation of practitioners with the requisite skills to facilitate adoption.

TOR 5 – The economic impacts of labour shortages on Australia's export oriented agricultural industries

In 2010-11, Australia produced over 44 million tonnes of grains and oilseeds valued at \$12.7 billion, of which 25.5 million tonnes (58% of total production) valued at \$8 billion (63% of total GVP) was exported.⁴

¹ National Grains RD&E Strategy: http://www.daff.gov.au/data/assets/pdf_file/0007/1873654/mpi-grains.pdf

² Australian Council of Deans of Agriculture, *BUILDING CAPACITY IN AGRICULTURE*, submission to 2020 Summit, 2008

³ Australian Council of Deans of Agriculture, *CAPACITY IN AGRICULTURE – A MATTER OF NATIONAL CONCERN*, submission to PMSIEC, August 2009

⁴ ABARES Australian Commodities Report, June 2011

Based on five year average from 2006 to 2011 Australia produced over 33.4 million tonnes of grains and oilseeds valued at \$9.6 billion, of which 19 million tonnes (59% of total production) valued at \$6.2 billion (67% of total GVP) was exported.

As a result of our export focussed industry we will continue to require a skilled workforce that can deal with shipping, handling and international marketing. The industry needs to prepare for the emergence of new sources of demand that may compete with current purchasing and demand value chains. And most importantly as an industry that is export focussed we will increasingly be impacted by off-shore forces.

TOR 6 – The incorporation of animal welfare principles in agriculture education

Not applicable to GRDC.

I would very much welcome further discussions with the Committee on the issues raised in this submission.

Yours sincerely

JOHN HARVEY

Managing Director