



SUBMISSION FROM AG INSTITUTE AUSTRALIA TO SENATE INQUIRY ON HIGHER EDUCATION AND SKILLS TO SUPPORT DEMAND IN AGRICULTURE AND AGRIBUSINESS IN AUSTRALIA

1. INTRODUCTION

The Australian Institute of Agricultural Science and Technology, trading as Ag Institute Australia (AIA) is pleased to have the opportunity to make a submission to this Inquiry.

Ag Institute Australia is the peak body in Australia representing the professions of agricultural science and natural resources management. It has over 1100 members including scientists, advisers, policy managers, consultants, agribusiness and farmers.

It provides strong, independent, balanced and factually based representation and advocacy on a wide range of issues affecting the profession and agriculture generally. In recent times these have included agricultural education, rural communication, farmer response to greenhouse gas policy, and rural research, development and extension (RD&E).

AIA is well placed to contribute. It has a special industry group which concentrates on matters of agricultural education and has made numerous submissions on the subject in recent years.

The main submissions are provided as email attachments. Journal references are also provided at the end of this paper. These along with the McColl Study in 1991 outline the major education and training issues and challenges facing agriculture.

It is of concern that little or no action has been taken by governments on most of the recommendations provided in these studies and submissions.

Meanwhile, the situation facing the industry has become progressively worse.

In fact we are now at crisis point where the shortage of appropriately trained people in all aspects of agriculture be it research, consulting, agricultural economics and policy, agribusiness, or the management of farms themselves threatens the ability of agriculture to continue to play its critical roles in food security, natural resource management, biosecurity, social change, and as a major contributor to the economy itself.

It is as if agriculture has been forgotten at federal and state levels in favour of the more popular and voter attractive areas of health, education, welfare and law and order. There is a preoccupation by governments with things which spend our wealth rather than those which create it such as agriculture, mining and innovation.

It is not our intention to revisit the contents of the many past submissions but rather emphasise the issues of more recent times.

2. Nature of Demand

- Work by Pratley et al indicates a need by industry for 2000 university graduates per year – currently the tertiary sector is producing about 700.
- The shortage is getting worse with the retirement of “baby boomers” and the redundancy/early retirement of others as a result of severe cuts at State level to agriculture service budgets.
- There is a shortage of graduates wishing to do post graduate studies and enter research. Higher degrees are no longer valued as highly as they used to be, rates of pay during and post study are less attractive than in the commercial sector, and there is less security.
- Farming has become far more technically demanding, requiring an understanding (and therefore better training in) the scientific background to their decisions.
- The engineering and computer skill sophistication of farming has increased in recent years, requiring a better understanding of these areas.
- Successful farming also requires a greater capacity to integrate the various enterprises and practices in a farm systems approach which effectively manages the land, water, human and capital resources in a way which provides sustainable profits and manages risk. So greater understanding of the farm system and of farm business economics is essential and will become increasingly so with the impacts of greater seasonal variation and diminishing terms of trade.
- With the deregulation of markets, especially in the grain industries, farmers must now have a greater capacity to operate in this area.
- With all of these additional demands, more farmers are now engaging consultants and agribusiness to assist in their decision making.
- However the agribusiness and consulting professions are having increasing difficulty recruiting suitable people. And yet, with the retraction of State agriculture services, it is these areas which are expected to provide the field services in research and extension to the industry.
- Biosecurity is an increasing concern in Australia with the easier access for overseas product and greater travel, and yet our capacity to meet this challenge with appropriately trained people such as pathologists and entomologists is shrinking rapidly.

3. Nature of Supply (or delivery of training)

- There are 13 Universities which provide specialist training in agriculture. Several others claim to do so but really offer more environmentally based courses which often do not equip graduates for work in mainstream agriculture.

- There is a close link between research and teaching, especially at Universities. With reduced investment in research in recent years has come a reduced capacity in teaching both in the depth and breadth of offerings.
- The cost of teaching agriculture is high when compared with other courses such as law, arts or economics. Under a system where Universities are owned by the States but largely funded by the Commonwealth under a student numbers formula, Universities which face severe budget pressures will place less emphasis on more costly courses, including agriculture.
- There has now developed a chronic shortage of lecturers in many areas and many lack practical field based experience of agriculture.
- One option is to rationalise courses across Australia with different Universities offering different specialities (such as entomology etc), including by external means. Some rationalisation has occurred but it seems to have been slow. Is this because of reluctance by the Universities themselves, the government funding arrangements or what? Incentives for greater rationalisation would seem to be warranted
- Changes to course structures and requirements, including the adoption of three year courses (partly in response to budget cuts) seems to have created less opportunity to provide the breadth of teaching which once existed.
- Whole sectors of agriculture are now seriously underserved by tertiary research and teaching organisations. Horticulture is a good case in point with a retraction by CSIRO, several universities and State Departments. This is , despite the fact that this industry will be an essential component of our future food security and water/land management strategies.
- In addition, agricultural engineering appears to have been lost altogether, despite the increasing need at consultant and farm level.
- Industry has expressed concerns with the lack of work readiness by new graduates, especially in areas such as an understanding of farm systems, farm economics and business, marketing and extension skills. These areas of teaching are weak in most of our tertiary and TAFE institutions.
- Agriculture degrees offered before the 1990's required a substantial period of compulsory on-farm practical experience. This requirement should be reintroduced for all students regardless of their preferred specialty or intended future career path.
- Some of these field skills were provided in the past by Departments of Agriculture but the cuts to budgets and failure to replace experienced staff and recruit new graduates in the field, has seen a loss of this capacity. This particularly impacts on practical field based research and extension.
- There appears to be an assumption that Universities should be the major source of training in agriculture with the result that other training sectors have diminished. Take for example the agricultural college system which in the past trained people in those very practical skills of farm practice, systems and business which are in increasing demand today. Those courses which do exist, such as Marcus Oldham College and the Longreach Pastoral Campus of the Aust Agricultural College are very popular. There is an urgent need to properly investigate the future role of the VET/TAFE sector in agricultural training and encourage its development in providing convenient training in farm practice and as part of options in a continuum of training from school to university.

- Such a continuum needs to include ongoing training of the workforce to keep up to date, something which is not done well at present.

4. Attracting More People to Agricultural Training

- One of the major issues is attracting more young people into agricultural training. **How do we attract more people to agriculture as a career of first choice, rather than as a job of last resort?**
- All sectors need to improve the image of farming as a business and agriculture as a career. The current image is poor, due partly to farmer organisations frequently talking the industry down and the media mainly highlighting things like drought etc. With some of the stark imagery it is little wonder that young people don't want to be involved, especially if they have no background in the industry.
- The program needs to commence in schools with the importance not just of agriculture as a defined field of study, but its contribution recognised in subjects such as history, geography, social sciences, economics and the sciences themselves.
- It is of great concern that we see Australian Curriculum, Assessment and Reporting Authority (ACARA) not even recognising the existing agriculture curriculum at the school level. What is more, the proposed National Curriculum does not include Agricultural Science as a stand-alone or even as a cross curriculum subject. The result will be a further decline in the teaching of agriculture and a poor perception of agriculture as a career choice.
- There are few specialist agricultural secondary schools in Australia – those that do exist are very popular and are providing excellent training for both tertiary and vocational entry students.
- In non-specialist schools the image of agriculture needs to be improved. There is currently a tendency for agriculture to be seen as an option for those who don't aspire to or are not capable of engaging in more popular courses.
- The Primary Industry Centre for Science Education (PICSE) initiative should be supported by all entities with a serious interest in agriculture training and its products.
- Agricultural teachers be they in schools or the VET/TAFE sector require greater support, especially in keeping abreast of agricultural issues and farm practices This requires a comprehensive mentoring program which engages universities and industry.
- Given the shortage of trained agricultural professionals and the impact this will have in agricultural industries and the economy, the introduction of a scholarship/cadetship system is urgently required. Such a system should be part of a national initiative, be supported by the Federal and all State governments and industry and include appropriate tax incentives. Such an initiative would provide a renewed focus on agriculture/farming as a valued

profession not just within the industry but the community generally. There would be an acknowledgement by governments that agriculture is important to the nation, something which is not very evident at present.

- Given that there is a clear shortage of training/skills in agriculture, some HECS relief, as has occurred with other sectors in a similar predicament, is also warranted.

5. Recommendations.

In addition to the numerous recommendations contained in the papers and cited in references attached, the current serious situation facing the industry requires that:

- The Primary Industries Ministerial Council and Primary Industries Standing Committee recognise the serious situation facing the industry and commit to take steps to correct it. In particular the impact of reductions in public investment in research and agriculture service budgets generally on training, education and the image of agriculture as a career need to be recognised.
- That there be closer links between the required outcomes of the many Inquiries etc conducted by Commonwealth and State agencies. Examples include this Inquiry and that recently conducted in Victoria, and the links between the various inquiries into agricultural R,D&E and ag education.
- A peak national body embracing all sectors of agricultural training and education as well the client sectors be established without delay and charged and appropriately funded to generate a comprehensive action plan to address the current situation. Ag Institute Australia, as the peak body representing the profession, is well placed and is prepared to provide leadership and input into and provide executive management to such a body.
- The current issues surrounding the mechanisms of funding student places by the Commonwealth be investigated with a view to greater support and flexibility to encourage entry into agriculture courses.
- The options to rationalise delivery of courses by Universities be further investigated, especially with the view to governments providing support to foster such rationalisation.
- Greater emphasis needs to be placed on agriculture in schools, not just as a subject in itself but as part of other curricula. ACARA's position on agricultural curriculum in schools needs urgent investigation with the view to developing Agricultural Science as a subject in its own right, and as part of other cross curricula subjects.
- Programs such as PICSE should be supported by the Federal and all States as part of encouraging the study of sciences, including agriculture in schools and beyond.
- The role of the VET/TAFE sector be better supported and promoted, especially for areas of training that encourage the rural placement of apprentices; and that the "credits" system encourage further training and part of the training continuum.

- Federal and State Governments, with the support of the Rural Research Corporations, initiate a system of cadetships/scholarships to encourage people to train in agriculture.
- Special provision be made for rural students who wish to study agriculture on the basis that their background suits them to agriculture, and their expenses are higher.
- Agricultural training be included as an initiative which qualifies for support under regional development programs. This would provide for locally managed approaches relevant to local industry and which integrate school, TAFE, University and private sectors.
- Given that there is a clear shortage of training/skills in agriculture, some HECS relief, as has occurred with other sectors in a similar predicament, be provided.
- Ongoing training be encouraged and that standards and accreditation programs which ensure excellence in the profession be adopted. The AIA is about to launch such an accreditation program for agricultural professionals, especially those in the field.

6. References, some of which are included as emailed attachments

- Department of Employment, Education and Training and Department of Primary Industries and Energy (McColl Report). (1991). Report of the review of Agricultural and Related Education. Volume 1, February. Canberra: Australian Government Publishing Service.
- Education for Agriculture – Does Supply Meet Demand – A Report by SA Division AIAST -2006
- Tomorrows Agricultural Scientists – Report of Conference: Meeting Industry and Resource Management Needs – J Radcliffe – SA Division AIAST – 2007
- AIAST Submission to the DEST Science Skills Audit D Tan et al – 2007
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- Department of Education, Employment and Workplace Relations, (2010). Canberra: Australian Government.
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- Malcolm, B. (2010). Agriculture and agricultural science: where have all the young people gone? *Agricultural Science*. 3:10, November, 35-39.
- Pratley, J.E. (2008). Workforce planning in agriculture: Agricultural education and capacity building at the crossroads. *Farm Policy Journal*. 5(3): 27-41. Pratley J.E., & Copeland L. (2008). Graduate completions in agriculture and related degrees from Australian universities, 2001 - 2006. *Farm Policy Journal*. 5(1): 1-11.

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- Robson, A. Skills Shortage Threatens Food and Water Security. Agricultural Science 2/11: 32-34

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