

Agricultural Education and the Challenges of Now and the Future

By Simon Livingstone and Peter Smith

The close nature of the recent Federal election brought rural issues into public focus as a result of the rural electorates of the all-important independent members of the House of Representatives. Rural education and training is a crucial part of our industry, but it seldom receives attention worthy of its importance. We argue that agricultural education is at a crossroads in Australia, but crossroads are dangerous places to be and to linger around for too long.

There are clear challenges for agriculture in a world with a looming food security crisis, a changing climate, a need to adapt to changing technology, and political discourse that embraces the need to be more green as well as the need to be mindful of the way we undertake animal production processes and outputs. These are not just challenges for agriculture. They are challenges for humanity if we wish to live in a stable world that has a hope of adequately feeding its growing population. This is the same world, which at least in Australia, is seeing a decline in the number of providers of agricultural education and training, and the number of individual participant learners. In here lie the threats and the opportunities for agricultural education and training.

The challenges

Signs of a looming international food security crisis are emerging. Food and Agriculture Organisation 2008 data estimate that there are 6.5 billion people in the world today and this is likely to climb to 9.3 billion by 2050. Much discussion focuses on how this increasing human population will be fed. It is predicted that the present food crisis is a forewarning of what the world can expect in the decades ahead as civilization runs low on water, arable land, nutrients, as bio-fuels expand, energy costs escalate, as climate change further impacts and as global demand doubles.

Adaptation has been a key element in the push by Australian agriculture to maintain productivity and to ensure economic viability in the agricultural production sector. This emphasis will become even more critical if the demand for increased food supply becomes the focus for the next decade, and we continue to engage with climate uncertainty and a continuing need to become more green. As the world population grows and food demand increases in this context of uncertainty, the education and training requirements of those involved in agriculture will need to improve. Jackeroos, jilleroos, stationhands, headstockmen and overseers will continue to contribute significantly to production agriculture in this country. These employees will need to keep up-to-date through skills training in the vocational education sector.

Technology change also continues to demand constant knowledge updates. It's not just the electronically based information and communication technologies that change, but there are major advances occurring in farm chemicals, in engineering, in water usage technologies, and in animal husbandry and production.

Taking the vast array of challenges together, where the real change will be in the future is in the education requirements of managers. The leading farmers and graziers are astute business managers who are in charge of assets valued at several million dollars. It is anticipated there will be fewer farmer managers in the future, but they will be highly skilled and tertiary qualified.

Education as part of the response to challenge

A crisis around food security, climatic variation, and technology investment, however, is not the only concern for Australia. There is an imminent agricultural education crisis, which is already apparent. The agricultural education sector is witnessing a largely unplanned and ad hoc rationalization of providers across Australia at a time when farmers and graziers need to be highly qualified to effectively manage complex businesses and environments. In Australia there are 39 universities with 12 offering agricultural related degrees. In addition to the universities, there are several agricultural colleges and TAFE institutes offering programs with Marcus Oldham College being the only private provider.

It is evident that most providers of agricultural education, whether it is at degree or vocational level, are struggling to attract and maintain sustainable student enrolments. The stand out among these providers has been Marcus Oldham College, which has experienced solid enrolments in a declining market over many years and has enjoyed support from industry in the form of philanthropic contributions and scholarships. The institution does not receive funding from government. The Marcus Model of teaching involving intensive 30 hours of contact per week is unique and proven. We suggest the issue here may be that well-resourced, industry connected, focussed and responsive agricultural education continues to attract clientele.

The rural sector, however, needs all agricultural providers to be well resourced, vibrant and forward thinking, so they can adequately prepare top graduates for the future. In every state of Australia there have been newspaper reports highlighting low enrolments and predicting the fate of agricultural education institutions. That is not a good image for agriculture. What impact does this continued negative publicity relating to the study of agriculture have on the sector and on student enrolments in the future?

There are inconsistencies between the demand and the supply sides of the agricultural education equation. A contradiction exists as many education providers cannot attract sufficient student enrolments to remain viable, and yet there is an endless number of employment opportunities in the rural sector. To add to this situation, the Commonwealth Government is aiming to raise the proportion of 25 to 34 year olds in the workforce with a bachelor degree or higher qualification from 29 per cent to 40 per cent by 2025. This is a very ambitious goal when the Productivity Commission in 2005 estimated that only 7 per cent of the agricultural workforce holds a university qualification.

Mapping the way forward

In these circumstances, it is inescapable for us to ask how we as a nation intend to develop the knowledge and skills we will need to ensure that agriculture remains a vibrant contributor to the Australian economy? How will we address a looming skills shortage – a phenomenon that we are already seeing putting the brakes on in a number of sectors of the Australian economy. At a broader level of concern, how will we ensure we have the skills to contribute to the needs of humanity more generally as the new demands of food security and climate change relentlessly place continual pressure on agricultural production? Which of the paths at the crossroad will we take?

As an industry, we need to develop a national strategy to address what is needed in the agricultural school sector, vocational and tertiary sectors with regard to the provision of agricultural education in TAFE and at universities. We need to understand that many levels of skills are required in our industry and, if we are to thrive and meet future needs we need to plan carefully how each of the education sectors can contribute best to the mix of skills needed. We also need to gain acceptance by government that funding will need to be provided to attract the *'best and brightest'* school leavers into research careers in universities beyond the current small amount of remuneration paid under scholarships arrangements. If this does not occur, it is likely students with very high TER and ENTER scores will be attracted to other industries that are perceived as more attractive. Other high paying sectors of industry that are experiencing skills shortages will suck workers away from agriculture – indeed, there is already evidence of this happening.

Important here is our need to do something for people who are currently working in agriculture – we shouldn't be thinking only of training newcomers. Our industry is full of untapped human talent – people who have a wealth of experience and a wealth of knowledge. Providing education and training that builds on the skills already possessed means we are investing in people already committed to our industry, and we are adding new technical, personal and thinking skills to tap into that untapped potential. Heather Ridout, Chief Executive of the Australian Industry Group, recently observed that high-performing companies are characterised by their focus on their people and their education and training.

But we in industry, getting a return on our investments, can't expect government to pay for everything. The business community has an important role in supporting agricultural education in the future through philanthropic donations and the forming of close relationships with a higher education provider of their choice. If pastoral companies and the many service sectors to agriculture wish to ensure top class graduates for their businesses in the future they need to demonstrate their commitment through financial contributions. Support from the business community along with the dedication and commitment of quality agricultural providers will go a long way to ensure Australian farmers of the future are well educated, efficient and capable of feeding the growing world population.

Successful agricultural enterprises, vibrant rural communities, and individuals committed to our industry are each at least partially based on the levels of skills and knowledge that rural people have. Unless we address our looming skills shortage through attracting more skilled and educated workers to our industry, our world is likely to suffer from much more basic shortages, such as food and the other nutrients required for the survival of our race, and for a peaceful co-existence across the globe.

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