

Vocational Extension: A New Cotton Era Is Dawning

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Background

The establishment and maintenance of a workforce, with advanced production and business skills, are key drivers towards maintaining the global competitiveness of Australian cotton. Australia's recent drought, competition for biophysical resources (land and water) and the increasing regional competition from alternative employers are all contributing towards reductions in local labour and management skills. In 2007, the Cotton Catchment Communities CRC (Cotton CRC) analysed demographic data figures for the town of Wee Waa (New South Wales); traditionally a cotton & wheat economy. The study revealed some significant shifts in labour and management skills from this regional community. Permanent staff numbers fell 60 % between 2004 and 2007. Casual labour fell 40% in the same period. Of the terminated employees, two thirds left the region and the remaining one third obtain another form of local employment or were classed as an unknown occupation (Spanwick *et al.*, 2007). The existence of this agricultural skills drain is supported by the National Farmer's Federation (NFF), who estimate that agriculture in 2007 had 50,000 unfilled jobs. The NFF suggest 15,000 additional employees are required each year for the next 5 years, to simply replace the labour that has departed agriculture in the previous 5 year period (AFISC, 2008).

The National Cotton Training Coordinator project has involved the development of various training strategies that address this declining skill base. It has concentrated on developing programs that focus on skill set development rather than training for full qualifications. These strategies are the focus of this paper. To discuss this topic, I outline two examples to illustrate how current cotton extension activities are aligned to principles of the vocational education and training (VET) sector. Several national reviews of the VET system support these industry initiatives. The Federal Standing Committee for Agriculture, Fisheries and Forestry concluded that "the focus in rural skills training should be on skills rather than qualifications". It notes that "the response of industry to the focus on qualifications rather than skills under the current framework has been to design its own training packages to better fulfil its needs" (Commonwealth of Australia, 2007). In addition, the report titled *Environmental Scan of Agrifood Industries* 'an industry in transition...' acknowledged and supported this position. There is an anomaly within the VET system between how industry obtains its skills and the funding that causes VET to focus towards full qualifications. The report stated "a model which gives flexibility and choice, and enables training providers to legitimately deliver incremental building blocks of skills, as well as full qualifications as paramount" (AFISC, 2008).

Australian cotton industry activities to address rural skill shortages

The Australian Cotton industry has tried to incorporate some of the findings associated with labour and skilling reports to form a strategic approach towards addressing these pressing issues. The strategy includes:

- The development and promotion of career pathways with a science focus in which promoting science disciplines within the secondary and tertiary sectors is a key approach. The Cotton CRC has employed a schools coordinator and provided continual support for

the cotton postgraduate course offered at the University of New England, Armidale, as a way of filling this strategy.

- The development and implementation of vocational programs within secondary schools. Farrer Memorial Agricultural High School at Tamworth, NSW is currently offering a Certificate II in Agriculture (specialising in cotton production) to year 10 students. In the industry, this award is better known as Cotton Basic which was developed from a Cotton Australia pilot project funded by the Department of Education Science and Training. Cotton Basic modified the existing Cotton Certificate II award to reflect a more specific skill set to address current industry needs (Jacobsen, 2007). Farrer Memorial Agricultural High School offer Cotton Basic as part of the VET in Schools program (VETiS). Teaching resources are available for NSW Department of Education and Training. The aim is to expand this Certificate into Queensland schools.
- Implementation of 'hands on', grower focused short courses which are developed with industry researchers and aligned to national VET competencies. The Cotton CRC Integrated Pest Management Short Course and the Cotton CRC / CSIRO Field to Fabric short course are two examples.
- Finally, industry intelligence on industry skill needs is provided to the Agrifood Industry Skills Council. The cotton industry has a close working relationship with this body which ensures funding opportunities are identified and agricultural training packages contain information that reflects skill sets to meet the changing demands of cotton employers. This industry relationship with such organisations is essential.

The activities mentioned above are continually evolving and this paper will outline two examples which highlight this evolution. Both examples demonstrate how the recommendations made at the state and federal level are incorporated into innovative extension and training approaches. The first example is the development of a Certified Best Management Practice Farm Manager (CBMPFM) award. The second is the development of an extension / training program called the Cotton and Grains Irrigation Workshop series.

The Certified BMP Farm Manager Award

This new industry award developed from a Queensland FarmBis Target Industry Initiative project, administered by CRDC and implemented by myself as National Cotton Training Coordinator. The Australian Cotton BMP program is an environmental stewardship process that allows producers to identify areas of improvement within their operation by assessing performance against BMP guidelines and implement strategies to correct these areas. When a certain standard is achieved, the producer can elect to have the farm audited and, if successful, a BMP accreditation is awarded to the farm. No accreditation is awarded to the individual for achieving that BMP status. This project demonstrated a linkage between the BMP industry guidelines; developed from industry research and government regulations and the educational requirements of competency units from three national VET training packages. The three training packages assessed were;

- RTD02 Conservation and Land Management Training Package,
- RTE03 Rural Production Training Package and
- BSB01 Business Services Training Package.

The mapping exercise proved significant, with 19 units of competency having various forms of alignment (Hickman and Dugdale, 2008).

With the assistance of Tocal College (a Registered Training Organisation within NSW), ten units of competency were selected and packaged into a Diploma of Agriculture (Specialising in Cotton

Production). This was a significant outcome. Industry has established a formal VET qualification for people to apply for when they have successfully implemented and achieved the industry BMP accreditation status for their farm. Industry endorsed and acknowledged this qualification by establishing a new internal industry award; a Certified BMP Farm Manager (CBMPFM). Successful participants in the program receive both the industry award (CBMPFM) and the national qualification (Diploma of Agriculture – Specialising in Cotton Production) from the registered training organisation.

The CBMPFM award is not automatically granted to anyone that achieves BMP accreditation for their farm. However, to be eligible individuals are required to have contributed significantly towards the farm achieving the BMP status. To become a BMP accredited farm the assessment is focused on practices and techniques implemented by management to identify and remediate risks within the farm. The CBMPFM is focussed on assessing the management and business skills developed as a result of that learning experience. The assessment is done on farm, by a registered training organisation (RTO) assessor using a cotton specific recognition of prior learning (RPL) process. This is a holistic assessment that gathers evidence developed by the individual during their BMP journey. The assessment gains an insight into how that individual makes management decisions in relation to BMP practices implemented on that farm. This CBMPFM program was released to industry in March 2008, and at the time of submitting this paper 15 people have commenced the CBMPFM program.

This is an innovative program because it addresses several issues raised by VET reviews. Firstly, it formally recognises the industry skill sets that have been established on science finding?? and the industry's environmental stewardship program. Secondly, the use of the RPL assessment technique is establishing the incremental skill set concept. The RPL procedure is not solely used as the final assessment, rather as the initial assessment to identify skill sets that an individual could enhance to meet industry expectations. Therefore, the RPL assessment broadly identifies skill deficiencies that can be used by industry to tailor the investment of training dollars. As an example, the initial RPL pilots of the CBMPFM program revealed labour management as a potential training issue. Finally, the third benefit is the program provides the individual with a marketable skill set for either internal industry movement (CBMPFM award) or for external movement into other agrifood industries (Diploma of Agriculture - Cotton). All these benefits have come from the amalgamation of an industry accreditation program built on research and extension outcomes with the rigour and structure associated with vocational units of competency.

Cotton and grains irrigation management workshop series.

The development of this workshop series was a key outcome for a project funded by the National Program for Sustainable Irrigation called 'Knowledge Management in Cotton and Grains Irrigation: Phase II'. This project employed a knowledge management broker (David Wigginton), to implement the findings from Phase I of the same project. I worked with David Wigginton and the other members of the Irrigation Training Group, to develop the format and delivery mechanism for this workshop series. The wording of "training" was not used in reference to this extension activity, to avoid producers incorrectly perceiving that this activity involves classroom learning environment. A view occasionally expressed by individuals within the industry. Rather, the workshop model evolved into delivering in a field day style, three hours of field activity that addressed a specific aspect of irrigation management in detail. Participants walked away from these workshops with practical information they can implement in their enterprise.

Each of the eight workshops is specific in terms of topics addressed and therefore, able to be delivered independently of other workshops in the series. However, attendance at numerous workshops is also designed to build on the information within the workshop series. In general, the order and timeline of workshop delivery is independent of each. Demand is driven by the participant skill needs, rather than a drive to roll out the workshop series from start to finish within a set time period. The topics covered by the series are: benchmarking and water budgeting,

scheduling level I and II, pump selection, surface irrigation performance evaluation, storage and distribution systems, metering and selection of Irrigation Systems (Hickman and Wigginton, 2007).

These workshops are delivered as part of the normal cotton extension activities conducted by the Cotton CRC Water Team.

Course content has been mapped to information within the cotton BMP Land and Water module and the following units of competencies:

- RTE4603A - Implement an irrigation related environmental protection program,
- RTE4609A - Implement, monitor and adjust irrigation schedules,
- RTE4605A - Schedule irrigations and
- RTE5604A - Develop an irrigation and drainage management plan.

All workshops contribute (in different combinations) towards these units of competencies. Obtaining the competency unit is purely an individual's choice. It is independent of the training. An evidence portfolio to achieve a unit of competency is formulated from activities conducted as part of the workshop activities and a post course activity. Everyone that attends the workshop undertakes the workshop activities and this information is collected by the extension people and entered onto a web database for future reference. This banking of knowledge allows the participant to gain a competency in future years. The post course exercise captures the implemented learning from the training. Once competencies are achieved, they can be used towards further qualification such as a Certificate IV in irrigation, an Irrigation Australia Limited Certified Irrigation Manager (cotton) or a Certificate IV in Agriculture (cotton or grains) to name a few options. A more detailed list of how the competencies could be used is found in Hickman and Wigginton, (2007).

The workshop series first commenced delivery in May 2007. As of June 2008, 21 workshops have been delivered by the Cotton CRC Water Team and 185 participants have been recorded. While no participants have achieved a unit of competency at this stage, the mechanism exist for those who wish to obtain the formal VET qualification in the future. However, the aligning of competency is more than providing a simple pathway to formally acknowledged skill sets. Rather it has allowed assessment structure to be incorporated into the extension activities ensuring that key learning's are actually achieved. In essence, it is building the rural skills capacity. A conclusion raised by Kilpatrick and Millar (2006) after conducting a literature review on aligning extension and VET found that, "VET and the extension sector have much to offer each other and that better alignment of extension and VET would increase rural capacity building". However, these authors also acknowledged that "practical links between training offered in extension and in the VET sector would not be simple. The VET sector includes a considerable bureaucracy" (Kilpatrick and Millar, 2006). While there is considerable bureaucracy in the VET sector; this can be accommodated if the training is structured to ensure that industry research drives the learning outcomes and not the requirements of a competency unit. Competency units do not equal curriculum for a course.

Conclusion

I believe the Australian cotton industry is at the forefront of blending both the VET sector and traditional extension disciplines as evident from the two examples highlighted in this paper. Incremental building blocks of skills are the key to developing a training culture and acceptance of vocational training in agriculture. Our clients are limited in time and resources so the delivery of training needs to be targeted, short in duration and technically detailed. The use of RPL assessments to acknowledge current skills and strategically identify future needs is also an important step forward. This will ensure industry and federal funding is focused and the demand for the training is set by industry needs and not funding opportunities.

Finally, developing relationships with federal and state training organisation or industry representatives such as Agrifood Industry Skills Council is an important part of the industry's training strategy. The National Cotton Training Coordinator has the ability to influence both the cotton extension and vocational training arena, and to liaise with various organisations to ensure the cotton industry is driving the training agenda. Managing the linkages with the VET sector is also very important to maintain the communication of information. In conclusion, I believe there is a new era in extension and it will be beneficial in developing how the cotton industry may conduct some extension and training activities. I also believe the Certified BMP Farm Manager award and the Cotton Grains Irrigation Management workshop series are two examples that will form a reference point for future extension activities.

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