Farmer preferences for formal learning: A review of current data and literature

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Executive Summary

This report provides an exploration of current data, ABS Agriculture Census and a 2011 DEPI study [Part A] and a literature review on the topic of farmers’ preferences for learning [Part B]. Taken together, the data and literature, highlighted the following key themes:

- Farmers (and farm workers) occupational categories have lower rates of post-secondary qualifications than other sectors. Completion rates of agricultural qualifications (at a range of levels) are low as people seek particular skill sets and then drop out.

- Formal training qualifications and enrolments in the farming sector are concentrated in the under 25 age group. The farmer age structure is older than most other occupations, partly explaining lower enrolment rates. Demand for full qualifications could be expected to fall in line with declining farmer population and declining new entrants.

- Formal qualifications are a strategy to change career – an objective of limited relevance to most farmers.

- Demand for agricultural courses will likely be geographically diverse and concentrated in areas where farming offers the most viable financial future.

- The farming workforce prefers practical, industry-specific training. Non formal learning also has a high value (e.g. extension groups, networking with other farmers, on-the-job experience).

- Farmers seek formal learning to address immediate skill gaps, learn enterprise-specific skills, understand new technologies, improve business management and meet health and safety requirements.

- Industry approaches and partnerships in VET training sector are a valuable way to prepare the farming workforce.

- There are several barriers to farmers’ participation in formal learning including: personal characteristics (confidence, self-efficacy), reluctance to complete a full qualification, lack of flexibility, technology barriers, cost and perceived benefits; and perceived relevance of formal learning to the farmer.
Introduction

Farmers’ participation in formal learning has been a focus of a recent inquiry in Victoria (Parliament of Victoria, November 2012) and a report at a national level from the Education, Employment and Workplace Relations References Committee (Commonwealth of Australia 2012). The topic has also received significant media attention in recent times, particularly around the role of traditional agricultural colleges and the need for skills-based training tailored to specific industry needs.

This report provides an exploration of current data (ABS Agriculture Census and a 2011 DEPI study) and literature (published and informal ‘grey literature’) on the topic of farmers’ preferences for learning. The scope is formal learning (formal education and training), particularly around the vocational education and training (VET) sector. Also, this review focuses on traditional farmers and farm workers, rather than the lifestyle farming sector. It is important to note that informal learning plays a major role in the farm sector, including farmer participation in production groups, extension and through their own information seeking activities. However, informal learning approaches are beyond the scope of this report.

According to a recent Commonwealth report, the agriculture workforce is extremely diverse and fragmented, has the lowest numbers of workers with post-secondary qualifications; and lower numbers of apprentices than other industries. Reasons cited include the higher age-profile in agriculture and a preference for ‘on-the-job’ skill development rather than more formal education (Commonwealth of Australia 2012). These themes are also echoed in the Victorian Inquiry into Agricultural Education and Training (Parliament of Victoria, 2012) where it is reported that on-the-job learning and practical experience is the traditional way that farmers and farm workers develop agricultural skills. It seems that trends in farmer learning from earlier studies (such as Bambery et al. 1997) still hold true – that much of a farmers’ education is continual, informal and derived in the workplace.

There seem to be a several views regarding the current and future learning needs of farmers and farm workers. There is a call for a shift towards requiring higher skill levels and qualifications due to changes in the industry such as: QA and industry standards, adoption of complex innovations and technology on farms, biosecurity requirements, climate variability and natural resource constraints. Additionally, there are more corporately-owned farms seeking suitably qualified staff (Parliament of Victoria, 2012). Further, the National Inquiry report highlighted that given the low level of formal education, agriculture (including farmers) may not have the right skill set to adapt to future challenges. The best way ahead, in the short-term, to address the skills shortage in agriculture is to ‘up-skill’ existing employees (Commonwealth of Australia 2012). The other, and just as relevant, perspective on farmer learning emphasises the need for practical, skills-based training in key competencies that are tailored to the specific needs of industry sectors.

This review explores the above themes based on two approaches. **Part A** of the report provides an analysis and interpretation of current data from ABS Agriculture Census and a telephone survey of 1,300 Victorian farmers (DEPI 2011) to highlight trends in the farming sector regarding post-secondary education. This data provides an accurate picture of post-secondary education attainment levels in farmers; the attractiveness (or otherwise) of formal education in farming; and the differences in education preferences in farming compared to other sectors.

**Part B** of this report is a brief literature review around the themes of understanding the ways that farmers prefer to learn; the types of formal training opportunities currently on offer; preferences for skills-based competencies compared with the pursuit of full qualifications; and the perceived barriers to farmer learning. The use of both current data and existing literature enabled us to make observations about consistent themes emerging in both sources of information.
Part A: Farmers and post-secondary education: analysis of current data trends

Introduction

Part A is based on an interpretation of ABS and DEPI data to provide an accurate picture of current trends regarding farmers and post-secondary education. It should be noted that the scope of this analysis is farmers and people employed on farms, rather than including the full range of agriculture professionals working in the sector.

Data is derived from three sources:
- the Population census;
- the ABS issue 4234.0 - Work-Related Training and Adult Learning, Australia, Apr 2013;
- the ABS Agriculture Census; and
- a telephone survey of 1300 Victorian farmers commissioned by DEPI in 2011.

Several themes are explored below.

Low post-secondary education attainment in the farming sector

Post-secondary education attainment is relatively low in the farming sector. Figure 1 illustrates the percentage of workforce occupational categories who either already have a post-secondary qualification or are enrolled to do so. Both farmer and farm worker occupational categories show lower rates of post-secondary qualification (around 40% of farmers and farm workers and 55% among new farmers). It seems that the farming sector aligns more closely with the unskilled occupations rather than professionals or managers [Figure 1]. Figure 2 summarises the data according to manager occupation classes with similar findings – that farm managers and employees have lower participation in post-secondary education.

Figure 1 Victorian workforce classifications – per cent with post-school qualification or enrolled in a post school qualification [ABS Australian Population Census 2011]
Formal training attracts a particular market segment – the young

The following figures show that formal training is most attractive to younger members of the workforce. The post-secondary enrolment (as a percentage of the post-secondary population) across age groups in the Victorian general population is shown in Figure 3, whereas Figure 4 presents post-secondary enrolment in age groups in the farming sector. Both figures show that post-secondary enrolments is concentrated in the under 25 age group in the general workforce [Figure 3] and farming [Figure 4].
There are several explanations for this. Firstly, all training has a cost. Formalised training has a greater cost, mainly through the opportunity cost of time not spent in the labour force. Training later in life provides a lower return on the training investment as there are fewer years to recoup the returns from the training investment. This means formal training will be less attractive with age. This holds true for all occupations.

**The younger segment is relatively small in the agricultural sector**

The farming sector is characterised by a higher representation of farmers in older age groups. In fact, the farmer workforce is older than most other occupations in Victoria [Figure 5, Figure 6], so we can expect that enrolment rates and qualification levels will be lower.
The older workforce in farming has two impacts on the level of qualification. Firstly, because farmer numbers are quite low in the under 30 age groups, the level of current enrolment will be quite low compared to other age groups. Secondly, the greater proportion of older farmers (greater than 60) means that increasing levels of secondary and post-secondary education over the past 40 years are much slower to change the overall rate of post-secondary education within the farmer population [Figure 7]. New and younger entrants generally have higher levels of post-secondary education than established farmers [Figure 8], indicating that we can expect qualification levels to rise with the passage of time. If the farmer population had an age profile similar to the rest of the Australian workforce, the rate of post-secondary qualification would rise from 41 per cent to 47 per cent [Figure 9].
Formal qualifications are a strategy to change career – an objective of limited relevance to most farmers

It is also useful to look at entry into farming. In some occupations, formal credentials are a stepping stone to career entry. In some professions, the entry requirement for credentials is legal. Whereas in other occupations, the entry requirement is softer, according to how influenced the employer is by credentials on the cv of an applicant (professions and trades are at the top of Figure 9). Entry to the occupation of farming generally has no formal credential requirement and it is only applicants for the role of employed farm manager who must negotiate a selection process. For most aspiring farmers the key entry requirement is capital. This may be inherited or obtained through success in a previous occupation. Even capital obtained through banks is generally secured through a mortgage against already owned assets.

Figure 10 highlights that improving job prospects is the most important reason for enrolment in post-secondary courses. Improving performance in an existing job is less of a motivation.
Farmer preferences for formal learning

Rather, it seems that workplace training is more popular as a means of improving performance in an existing position [Figure 11].

In some occupations the incentive for undertaking training is escape - to prepare for a better position within an existing career stream or a shift to a better career such as a move into management. Formal credentials can be a tool to assist in this strategy. It is likely that these motivations are relatively rare in farming and that few farmers aspire to exit farming for another occupation and will therefore see less benefit in formal post-secondary qualifications. Those who aspire to improve their lot in farming generally do not need to convince other judges with credentials. The only yardstick that counts is financial success in farming. This generates additional capital directly, or indirectly through support from financial institutions. These differences can be inferred in Figure 12. Farming has a steep decline in enrolment in formal post-secondary education after the age of 25. This is not seen in the community and personal service work sector where improved qualification is more likely to be a stepping stone to a preferred position.
Much of the difference in the post-secondary education and enrolment of farmers compared to the rest of the workforce can be explained by the nature of farming entry. These observations explain why the task of selling formal credentials to farmers is challenging, and why farming, a relatively skilled occupation, displays levels of post-secondary qualification similar to that observed in unskilled occupations.

In farming, credentials do not serve as a useful proxy indicator of success or potential success. Qualifications are more likely to be assessed by the farmer as a tool to directly improve performance as a farmer. Any component not judged to achieve that objective will have little attraction. Qualifications can generally be made attractive when they are associated with a legal training requirement, such as chemical handling or the OH&S obligations of employers. Post-secondary qualifications can be expected to continue to appeal mainly to the young aspiring farm entrant.

**Farm restructuring inevitably reduces demand for formal post-secondary agricultural education**

Another factor that is likely to further influence the falling demand for post-secondary qualifications in agriculture is farm restructuring. The value of qualifications seems to be most appreciated by those in their 20s considering an entry into farming. The number of new entrants in this age group has been falling consistently over the past 35 years [Figure 13, Figure 14]. This demand can be expected to continue to fall.
Farmer preferences for formal learning

Geographic influences and the demand for formal training

It is likely that demand for agriculture courses will geographically concentrated. There is good evidence that entry to farming by young people is most likely to happen on larger farms that offer a potentially viable financial future [Figure 15]. These larger farms are concentrated in some parts of the landscape, notably the cropping region [Figure 16]. This may partially explain the relative success of Longrenong College. The relationship between farm scale and a younger farming population is shown in Figure 17 using data for Statistical Sub-Divisions across Australia.
Farmer preferences for formal learning

Figure 15 Estimated age distribution of farmers operating farms with greater than $400,000 EVAO and less than $100,000 EVAO in 2011

Figure 16 Location of financially larger farms in Victoria 2011 [ABS Farm Census 2011]
Summary Part A

- Farmers and farm worker occupational categories have lower rates of post-secondary qualifications compared to other sectors.
- Across the Australian workforce formal training for credentials is most likely to be undertaken as a tactic to change occupation or to seek promotion.
- Entry to farming generally has no formal credential requirement, employed farm managers may be an exception as they often need to meet a selection process. In farming, formal qualifications do not tend to serve as a proxy indicator of success or potential success.
- Few farmers aspire to exit farming for another occupation, therefore seeking formal qualifications may be of less benefit. However, some qualifications are likely to be more attractive where there is a legal training requirement.
- Formal training is most attractive to younger members of the workforce. Post-secondary enrolments in the farming sector are concentrated in the under 25 age group – many of these seeking to enter farming. The farmer age structure is older than most other occupations, partly explaining lower enrolment rates.
- Demand for full qualifications could be expected to fall in line with the declining farmer population and declining numbers of new entrants.
- Demand for agriculture courses will likely be geographically diverse, concentrated in parts of the landscape that offer the most viable financial future.
Chapter B: Farmer preferences for learning: literature review

Introduction

Part B of this report brings together key themes in the recent published and informal ‘grey literature’ (technical reports, industry publications and media) on the topic of farmers’ preferences for learning. More specifically, we explore the topics of ‘when and what’ farmers want to learn, the types of formal learning currently offered to farmers, preferences regarding skill-based versus full qualifications; and perceived barriers to farmers’ accessing formal education.

When (and what) do farmers want to learn?

As a background to understanding the triggers for farmer learning, it is useful to look at recent census data regarding current formal learning trends in the farming sector [Part A]. To recap, an analysis of ABS Population Census data (2011) shows that farmer (and farm worker) occupational categories have lower rates of post-secondary education in comparison with other sectors. Around 40% of farmers and farm workers have a post-secondary qualification, whereas 55% of ‘new farmers’ have a post-secondary qualification.

As far as formal, diploma-based and degree courses in agriculture, it seems that formal training is more attractive to younger people, with post-secondary course enrolments most concentrated in the under 25 age bracket (ABS 2011). It seems that young aspiring farmers may do a qualification through a university, agricultural college or other vocational provider (TAFE) with a view to then going back to the farm, working on or managing a farm, or choosing an agricultural career. For new entrants to farming (in older age bracket) and existing farmers and farm workers, there are different motivations for pursuing formal learning, summarised in Table 1.

Table 1 Topic areas where farmers seek formal learning/training*

<table>
<thead>
<tr>
<th>Skill areas</th>
<th>Specific skills / knowledge required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific enterprise / industry</td>
<td>Learning new skills and knowledge as new entrants to farming; when changing enterprises; and/or affirming or fine tuning current practices; learning basic farm skills (e.g. fencing, livestock handling, spraying). Industry-based production and profitability skills. Specific industry requirements (e.g. QA systems).</td>
</tr>
<tr>
<td>New technologies and innovations</td>
<td>Specific skills required to understand and use a new innovation or technology, using new machinery and equipment.</td>
</tr>
<tr>
<td>Preparing for and responding to unexpected events</td>
<td>Responding to drought, managing climate variability, using forecasting tools, responding to changing commodity prices, biosecurity events</td>
</tr>
<tr>
<td>Business management</td>
<td>Pursuit of business efficiencies, marketing, succession planning</td>
</tr>
<tr>
<td>Human resources</td>
<td>Becoming an employer; how to manage people</td>
</tr>
<tr>
<td>Health &amp; Safety and industry</td>
<td>Legal requirements around providing a safe work place, training required to buy and use chemicals, permits to operate machinery</td>
</tr>
<tr>
<td>requirements</td>
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</tbody>
</table>

*Brown & Bewsell 2010; Franz et al. 2010; George et al. 2005 & 2007; Fyffe & McDonald 2009

A review of skills needed by agrifood business owners (Fyffe & McDonald 2009) reported that skills needed the most are: business management, financial management, people management and marketing. Also, farmers are often motivated to learn when they want to improve a particular aspect of farm efficiency and that training is seen as essential to keep up with market competition and for long-term business viability.

Managing variability is an emerging area where farmers are seeking skills. With farming systems in Australia characterised by ongoing variability, farmers (and farming systems) need to be able to respond to changing commodity prices, climate, market requirements and availability of inputs (e.g. water). The farmers’ capacity to respond and adapt as seen as crucial for this resilience (Nettle & Paine 2011), hence a strong role for farmers to learn in this area.

An analysis of self-rated farmer knowledge and skills regarding climate variability management showed that around 30% of farmers believe they are competent in managing climate variability and, as a result, many are open to considering
flexible education and training to address this (George et al. 2007). The valuable aspects of climate variability education are understanding variability, using forecasting tools and the application of forecasting tools for decision-making (George et al. 2005).

Farm workers also require specific skills, much of these skills being practical and industry specific. Impey (2012) surveyed farmers at a NSW Farmers Association Conference about the types of skills that farmers needed from farm workers. He divided the skills into 1) basic (general farm hands, harvest workers), 2) moderate skills (secondary qualifications with farm experience); and 3) higher skills (university graduates). It seems that only 11% of respondents required people with higher skills, and what was preferred were moderate to basic skills. Farmers were generally looking for trusted employees with skills across many aspects of farming, particularly livestock handling and machinery operation and maintenance. The survey (while a relatively small sample) concluded that vocational training at Cert II or Cert II level had a major role to play in preparing the agricultural workforce.

The types of formal learning currently offered to farmers

There are several types of formal training that can be accessed, at various qualification levels. Of particular relevance to farming is Vocational Education and Training (VET). VET is one of the main sources of formal learning for farmers because it is practical and industry-focussed. The qualifications for agriculture under VET include general agricultural qualifications (ranging from Cert II through to Advanced Diploma), sector-specific qualifications (e.g. dairying) at various levels and then a range of qualifications for the sectors servicing farming (e.g. irrigation, machinery, wool classing), then a range of traineeships (Parliament of Victoria 2012). Traineeships are seen as particularly useful for agriculture sector as the content can be tailored to specific skills and knowledge required to work on a particular property.

Registered Training Organisations (RTO) deliver VET courses, including agricultural colleges, TAFE, private providers, schools and adult education organisations. RTOs deliver the training via courses accredited under national training packages (i.e. Agriculture, Horticulture and Conservation and Land Management training package) (Parliament of Victoria 2012). Government offer subsidised training places to cover the costs of VET qualifications. However, to qualify for training subsidies (for a Cert II or above qualification), the applicant needs to undertake a course that is at a higher level than their existing qualification’ (DEECD 2012) – so farmers with any other existing qualification would not be eligible.

According to the Victorian inquiry into agricultural education and training, agricultural training operates in ‘thin markets’ where ‘the number of learners may be too small to attract training providers’ (Parliament of Victoria 2012: 116). This is blamed on geography factors and the particular nature of the agriculture sector. The higher level VET qualifications are particularly affected – impacting both regulation delivery and ability to cover multiple locations. It also seems that quality of training can be affected.

The value of the traditional agricultural colleges (i.e. Longerenong) has been discussed in the rural media in recent times. These courses are Diplomas and Advanced Diplomas and are said to offer a more hands-on and practical course for people wanting to work on farms or in agribusiness.

There are mixed experiences regarding current demand for (and participation) in VET courses in agriculture. Figures presented in the Victorian inquiry into agricultural education and training (Parliament of Victoria 2012) suggest growth in Certificate II Agriculture and Certificate III Agriculture, but decline in demand for Diploma Agriculture between the years 2006 to 2010.

It is also useful to look at completion rates for VET courses in agriculture. Between the years 2008 to 2010 there was an upward trend in completion of Cert III Agriculture, Cert III Rural Business, Cert IV Agriculture, Diploma Agriculture, Advanced Diploma Agriculture (2011 Skills Victoria data reported in Parliament of Victoria 2012). However, at the national level, agricultural studies has ‘one of the lowest projected qualification completion rates’ (Parliament of Victoria 2012: 113). Interestingly, the inquiry report says that for VET studies it is ‘difficult to determine the significance of course completion rates within the VET sector because some students are only seeking to learn particular skills and never intend to complete a full qualification’. The inquiry reported strong evidence that agriculture sector ‘has a strong preference for learning particular skills or acquiring skill sets as opposed to completing a full qualification’ (p. 114). Figure 18 compares the completion rate in agricultural studies compared with other fields (for 2005 to 2007).
The dairy industry seem to be taking the lead in developing and delivering industry-led training for the dairy workforce, via the VET system (Foster & Schulze 2011). The National Centre for Dairy Education (NCDEA) aligns with the VET system (partnered with TAFE) and is very much focussed on delivering training based on skill sets specific to dairy industry needs. Both new entrants and established dairy farmers are catered for. The NCDEA was set up due to concerns of the industry’s low level participation in training. One of the biggest area of need for training is to help dairy farmers who are employing people for the first time. Qualifications are specifically linked to particular roles in a dairy business [Table 2]. Skill sets were identified by the industry and mapped against VET levels.

Table 2 Dairy industry-led training and alignment to VET (Foster & Schulze 2011)

<table>
<thead>
<tr>
<th>Role in dairy business</th>
<th>Qualification level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business manager</td>
<td>Advanced Diploma of Agriculture</td>
</tr>
<tr>
<td>Senior production manager / production manager</td>
<td>Diploma of Agriculture</td>
</tr>
<tr>
<td>Senior farmhand</td>
<td>Certificate IV in Agriculture</td>
</tr>
<tr>
<td>Farmhand</td>
<td>Certificate III in Agriculture</td>
</tr>
<tr>
<td>Assistant farmhand</td>
<td>Certificate II in Agriculture</td>
</tr>
</tbody>
</table>

While the dairy industry has specifically developed skill-sets training (aligned to VET), one of the biggest challenges is that government funding policies ‘restrict the opportunity for members of the industry to access further funded training once they have achieved a Diploma level qualification’ (Foster & Schulze 2011: 5).

**Farmer preferences for learning**

There are varying perspectives in the literature regarding farmer preferences for learning. Most studies agree that farmers prefer a combination of ways to learn such as: reading, expert advice, talking to/interacting with other farmers, media, experience and observation, attending field days/events/seminars, formal training, short courses; and formal education (Bambery et al. 1997; Kilpatrick and Johns 1999; Fulton et al. 2003). A US study (Franz et al. 2010b) found the preferred ways that farmers want to learn combine hands-on learning, demonstration, farm visits, discussion and opportunities for one-on-one with experts. They also asked what farmers wanted from learning and found: help with interpreting information, how to apply that information, knowledge based on research and provision of socialisation opportunities as part of the learning.
Kilpatrick and Rosenblatt (1998) suggested that farmers often prefer to seek information rather than participate in formal training because: they prefer independence, lack confidence in a training setting, prefer information from known sources; and can have a fear of being exposed to new knowledge. Table 3 summarises the findings of several studies regarding farmer preferences for learning.

Table 3 Farmer preferences for learning

<table>
<thead>
<tr>
<th>Study</th>
<th>Farmer preferences for delivery of learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown &amp; Bewsell (2010)</td>
<td>Learning tailored to farmer age, experience and situations. Balance of field activities, presentations and discussions, working through calculations together. Opportunity to collaboratively design workshop structure and content (between presenters and participants). Held at suitable time and place. Assistance with computers. Take account of local conditions and scenarios.</td>
</tr>
<tr>
<td>Bamberry et al. (1997)</td>
<td>Preference for non-organised and non-institutional learning (one-on-one interaction with experts, peers, observation) rather than formal organised training.</td>
</tr>
<tr>
<td>White &amp; Sheath (2011)</td>
<td>Group learning, revisiting learning from earlier sessions, opportunity to learn from other farmers, supporting different learning styles. One-on-one help with computers.</td>
</tr>
<tr>
<td>Bone (2004)</td>
<td>Formal sessions of short duration, convenient timing to fit with farm activities, hands-on and practical sessions with high-quality presenters, personal contact and plenty of opportunity for discussion, methods allowing farmers to learn at their own pace.</td>
</tr>
<tr>
<td>Franz et al. (2010)</td>
<td>Learning that considers the farmers’ level of experience with farming, the scale of their operation and location. Farmers want trusted educators who are well-connected to the local area and who respect farmer values and goals. Farmers enjoy learning from and teaching each other.</td>
</tr>
</tbody>
</table>

Approaches involving participatory research, action learning, farm focus groups, and monitor and demonstration farms have been widely tested over the last few decades in agricultural extension. Emphasis on ‘learning by doing’ particularly in a group context to build on the benefits of experiential learning and group discussion (Ridley et al. 2004; White & Sheath 2011).

A study by Bone (2004) found group learning with other farmers was not highly preferred. Kilpatrick and Johns (1999) had also found that farmers prefer independence, can lack confidence in a formal training setting and can experience fear and apprehension when exposed to new knowledge. Personality and self-efficacy seem to play a strong role in farmer preferences for learning. For example, Bone (2004: 34) found that ‘an improved self-belief is the key to farmers engaging in further training and development’. She found that top-performing farmers were more interested in on-the-job action learning methods, where action learning described as continually improving practices through a cycle of reflection and creativity.

The recent Victorian inquiry into agricultural education and training has useful insights in the Victorian context. The dairy industry highlighted that dairy farms are mostly run as family farms, many are under financial stress and that there is a culture of valuing ‘on-the-job experience over formal learning or qualifications and a history of accessing new industry thinking and knowledge through free extension services’ (Parliament of Victoria, 2012: 122).

Submissions to the Victorian inquiry noted that while there is a strong focus by government on encouraging completion of a full VET qualification, the agricultural is characterised by a workforce that seeks to acquire skills for specific tasks, which don’t always lead to a full qualification. The Inquiry suggests this is so because: 1) the agriculture sector doesn’t place strong emphasis on formal qualifications; 2) employers want training that is tailored to the needs of their particular business; and 3) people generally seek training to address immediate skill gaps (Parliament of Victoria 2012).

Skill sets often fit with specific units of competency within full qualifications or training packages, and also training providers can tailor courses with certain skill sets. Various submissions to the Victorian inquiry called for ‘skill sets’ to be publicly funded. To get around this people have enrolled in full qualifications, acquire the skill sets they need and then
withdraw, resulting in lower completion rates for agricultural courses. Several submissions to the Victorian Inquiry were concerned with the wastage of this system and that there could be a risk of non-formal education and training (Parliament of Victoria 2012). The also highlighted that some training on offer to farmers is too generalised and needed to be tailored to industry – that more collaboration between industry and training sector (particularly VET) was needed.

Another criticism of the full qualification approach (in comparison with ‘skill sets’) is that the curriculum can be particularly large and difficult to understand and that some of the subjects are thought to be ‘extraneous’ (Commonwealth of Australia 2012).

Current barriers to farmers’ accessing formal learning

The main barriers to farmers pursuing formal learning include factors related to personal and business characteristics, convenience and technology, reluctance to complete full qualifications, cost and perceptions around the relevance of formal learning in a farming context (Table 4).

Social-psychological factors such as attitudes and self-efficacy play an important role in farmers’ motivations to learn. Self-efficacy are an individual’s beliefs about how much control they have over events that control their lives. Bone (2004) found that low self-efficacy and the individual’s belief that they didn’t have the skills to benefit from the learning being offered, were pre-disposed to avoid further formal learning. Farmer education background can also influence their motivation to participate in learning (Kilpatrick 1996) (better educated are more likely to seek further opportunities for learning). Perceived usefulness of the training and relevance to the farmer’s own specific context is also important. Farmers might stay away from generic workshops which are perceived as responding to wide range of experience/skills. Instead they often prefer workshops which cater to their own specific needs (Brown & Bewsell 2010).

Table 4 Barriers to farmers’ participation in formal education and training as reported in the literature

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal and business characteristics</td>
<td>Educational background (Kilpatrick 1997), previous bad experience with training (Kilpatrick &amp; Johns 1999), ideology that education valued as part of farming (Fulton &amp; Champion 1999), perception that the training not relevant to the business, personal distrust of motive behind the training (Kilpatrick and Johns 1999); Fear of failure (Fyffe &amp; McDonald 2009), lack of self-confidence.</td>
</tr>
<tr>
<td>Reluctance to complete full qualification</td>
<td>Farmer preference for completing specific competencies rather than full qualifications. This is because they often seek specific skills and within particular commodities and part-qualifications offer flexibility in terms of delivery and time demands (Thompson 2013). Full qualifications don’t always meet the wide range of skills that sole-owner/operator farmers require (Smith &amp; Brunton 2008).</td>
</tr>
<tr>
<td>Lack of convenience and flexibility</td>
<td>Learning duration, location, timing, availability of childcare (Kilpatrick &amp; Johns 1999).</td>
</tr>
<tr>
<td>Technology barriers</td>
<td>Poor computer skills (Brown &amp; Bewsell 2010); internet access</td>
</tr>
<tr>
<td>Perceived relevance of formal learning</td>
<td>If farmers don’t see the content of the training as relevant and applicable to their own context, they are unlikely to participate (Kilpatrick &amp; Johns 1999). It can be difficult for participants to identify what they want to learn at the outset and how this fits with their business needs (Smith &amp; Brunton 2008).</td>
</tr>
<tr>
<td>Cost</td>
<td>High cost of formal education and not all farmers or farm workers can access government subsidised training places. Returns/benefits from doing the training need to be substantial and accrue in short-term. A VFF submission to the Victorian Inquiry argued that farmers who wish to update their skills ‘do so at considerable personal cost to them’, highlighting that Cert 3 and 4 courses had doubled in cost, leaving farmers with ‘no incentive to upskill’ (Parliament of Victoria 2012: 121). There are also costs involved in travel to training and taking time off.</td>
</tr>
<tr>
<td>Previous experiences with formal learning</td>
<td>Previous and unsatisfactory experiences of formal education and training can be a barrier to farmers’ seeking further training (Kilpatrick and Johns 1999).</td>
</tr>
</tbody>
</table>
Misconceptions

Misconceptions that farmers don’t need formal education and that formal courses are too theoretical instead of practical (Fyffe & McDonald 2009). Perception that training is not a valued part of farming (Fulton & Champion 1999).

Summary Part B

In drawing together the literature and unpublished technical reports in the area of ‘farmer preferences for learning’, the following key themes emerged:

- Completion rates of agricultural qualifications (at a range of levels) are low due to people often seeking specific skill sets and then dropping out rather than completing a full qualification.
- The farming workforce prefers practical, industry-specific training. Non-formal learning also has high value (e.g. farmer groups, extension, networking with other farmers, on-the-job experience).
- Farmers are motivated to seek formal learning to: address immediate skill gaps, when changing enterprises or when new entrants to farming, to learn industry-specific production skills, to understand and use new technologies and innovations, improve business management and human resources skills and to meet OH&S and industry requirements. Managing variability is an emerging area where farmers may seek new skills.
- Industry approaches and partnerships in VET training sector are a valuable way to prepare the workforce in particular sectors as specific skill sets are required.
- Barriers to farmers’ participation in formal education and training include: personal characteristics (confidence, attitudes, self-efficacy), reluctance to complete a full qualification, lack of convenience and flexibility, technology barriers, cost and perceived benefits of training, perceived relevance of formal training for farming and previous experiences with formal learning.
Conclusion

Taken together, Part A (analysis of current farming sector data) and Part B (literature review) highlight some consistent themes:

- As emphasized in Part A, workplace training is a preferred means of improving performance in an existing occupation. Existing farmers (who are unlikely to leave farming for a new occupation) and farm workers are likely to seek formal learning based around particular skill sets as a way to: up-skill or fine tune enterprise-specific skills and knowledge, understand a new technology or innovation, prepare for or respond to unexpected events, meet legal requirements and improve business management. For the most part, these learning areas are more suited to skill-based training rather than as full qualifications. The approach taken by the dairy industry (aligning with the VET system) is very much designed with skill-based training in mind. Farmers require formal learning that is practical and industry focused, but also place great value on non-formal learning.

- The notion that agricultural training operates in ‘thin markets’, due to varying demand in different locations, is consistent with the census data (Part A) where likely demand is concentrated in locations where particular agriculture industries offer the most viable financial future. This emphasizes the need for traditional agricultural colleges to deliver industry-based, practical training in key locations. Traditional formal courses attract a small niche within the farm population – aspiring young entrants. The demand for this service has inevitably declined as a consequence of the ongoing reduction in farm numbers (and therefore new entrants) due to ongoing industry restructuring.

- Agricultural studies have low completion rates compared to other sectors of vocational training, with farmers often dropping out once particular skill sets have been learnt. This is evident from both recent Vocational Education Research data and submissions to inquiries into agricultural education.

- The literature highlights a culture of valuing on-the-job experience over formal learning for new entrants into farming or working on farms. This theme is consistent with ABS data showing low post-secondary enrolments in the farming sector. Also, the motivation to undertake formal training to ‘improve job prospects’ is not as relevant to farming where there does not seem a strong requirement for qualifications to enter or achieve career progression.
Farmer preferences for formal learning

References


