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Southern Meat Producers - Training Needs Analysis

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Abstract

This report provides an in depth study of felt knowledge, learning and training needs of meat producers in Australia.

The purpose of this study is to inform the training that MLA provides for Australia's meat producers. More specifically the study is guided by two main research questions:

1. What do southern meat producers feel their training needs are?
2. How interested are they in the specific topics of Cost of production, The crop to livestock transition, and Sheep nutrition, and what would effective training on these topics look like?

Using a largely qualitative methodology that engaged and trained regional teams of interviewers, the study found that only a small proportion of producers intend to translate a learning need to a training need and actually participate in training. It must be recognised that producers fulfil their knowledge and learning needs in a wide range of ways and training is one of many ways in which this is done.

The findings of this study formed the following principles:

- MLA must focus on its area of strengths which are in the area of meat production and marketing;
- The market must be segmented into larger producers and others;
- There is a need to create awareness of the knowledge which is currently available for producers;
- Farmers see training as important but will be selective due to the significant commitment required to take part; and
- Networks are required to aggregate demand.

These findings have led to a number of recommendations in relation to:

- Specialist knowledge vs. management skill – MLA is clearly the organization that has the specialist knowledge. Many organisations can provide training in management;
- Providing high quality service to large specialised producers – A strategy is required to understand the needs of large specialist producers and deliver high quality training in line with their needs in response to demand;
- Developing a low cost, broad network of 'brokers' – A network of training brokers is required to create awareness and aggregate demand;
- Developing advisor networks – A network of advisors is required to enable retailing of knowledge and deliver a response to producers' needs; and
- Delivery of training in response to aggregated demand – given the above, training can be delivered in response to felt need through a range of providers..

These five strategies are complementary and dependent on each other.

Executive Summary

The purpose of this study is to inform the training that MLA provides for Australia's meat producers. More specifically the study is guided by two main research questions:

1. What do southern meat producers feel their training needs are?
2. How interested are they in the specific topics of Cost of production, The crop to livestock transition, and Sheep nutrition, and what would effective training on these topics look like?

This project, apart from addressing the specific research questions, has provided MLA with a detailed and thorough review, analysis and discussion of training and training needs for meat producers. This in-depth treatment of the subject is potentially very important for other MLA activities and other research organisations working with agricultural producers.

The methodology used in the project was unusual as it involved using local interviewers to carry out in-depth interviews in our regions in Australia. One hundred and ninety interviews were conducted by eighteen interviewers with a total of two hundred and ninety seven interviewees. This method has been evaluated and shown to be successful and potentially useful for MLA in the future for conducting social research and in particular understanding producer needs.

Following this Executive Summary, this report comprises the following parts:-

Part 1: Project Objectives

Part 2: Review of Past Research

Part 3: Methodology

Part 4: Results

Part 5: Discussion

Part 6: Conclusion

Part 7: Recommendations

Part 8: Bibliography

Part 9: Appendices

This project has shown:

- producers have a desire for training in marketing, animal management and cropping and have a moderate level of interest in the proposed topic areas;
- producers full training needs must be distinguished from their felt knowledge and training needs;
- producers can and increasingly do fulfil their knowledge and learning needs independently of training;

- the role of training for producers operating in an increasingly complex environment must be questioned;
- training is an accepted and evolved part of life for most producers;
- training is valued for a range of reasons apart from information provision;
- only a small proportion of producers intend to translate a learning need to a training need and actually participate in training;
- training carries significant costs and risks for producers;
- there is a need for local training brokers to amalgamate demand for training and understand felt training needs and provide this information on a regular basis to MLA;
- MLA should see themselves as knowledge providers who assist producers by providing training to them indirectly as much as directly, working with the advisors that producers use;
- MLA needs to focus on the areas of market demand identified in this study, including demand for non-commodity-specific training such as climate, finance and marketing;
- there seems to be three market segments we have termed pre-training, actively training and post-training. The post-training group tend to align with the larger producers;
- regular and constant two way communication is required with producers to understand their needs and communicate what is available; and

These findings have led to recommendations for five strategies:

1. MLA should focus on its area of strength

   MLA must firstly be clear about its obligation to 'wholesale' specialist knowledge on the meat industry vs responding to producers felt need for management training. Delivery of specialist knowledge is an area of clear market failure and MLA is the research organisation with the intellectual capital to deliver.

   More generalised knowledge can be delivered by a wide range of deliverers and the market failure is doubtful.

   Therefore, MLA should become more focused on exposing industry to the technologies which they have invested in through field days, advisor updates and newsletters.

2. Segment the market and provide high quality service to the large specialised producers

   A strategy to understand the felt needs of and deliver to large specialised meat producers is essential to deliver maximum value to meat producers. This is best done through creating an elite network or working with existing networks. The network is only needed to aggregate demand and therefore address market failure.

3. Create awareness through market intelligence across a broader network

A low cost network of ‘brokers’ is required to provide regular monitoring of felt need, create awareness of opportunities and aggregate demand across the industry. This network would use existing positions in a range of community roles. For example, community houses, rural counsellors, or local government may supplement their income through providing the role.

4. Develop advisor networks

A renewed effort to work with advisors and develop the network of advisors in the public and private sectors is required to enable retailing of knowledge and deliver in line with producer’s needs. Cooperation with GRDC and AWI is important as advisors are increasingly seeing themselves in broader roles.

5. Delivery of training in response to aggregated demand through producer networks

Given all of the previous four strategies, then training can be delivered in response to felt needs through a range of providers. This study indicates the cost of training is not of concern to farmers as long as it is delivered well and is seen as important for the business. MLA’s main role is to bring the people together and ensure the deliverers are available.

Contents

Part 1: Project Objectives

1.1 Research Questions

The purpose of this study is to inform the training MLA provides for Australia's meat producers. The aim is to explore the relationship between producers' felt needs, their perceived challenges, their perceived strengths (skill bases), their desire for training, their experiences of training, and externally perceived needs (in particular, training needs identified by MLA). The primary objective is to answer the following two research questions:

1. What do southern meat producers feel their training needs are?
2. How interested are they in the following topics that MLA runs training in or is considering running training in? What would effective training on these topics look like?
    - Cost of production
    - The crop to livestock transition
    - Sheep nutrition.

In answering these questions, possible explanatory variables are sought, drawing on categories highlighted in past research (such as producer age) or the research design (namely, state).

1.2 Research Approach

A secondary objective is to work with partner organizations and local interviewers in each of the regions in order to use the research process to build local capacity, knowledge and networks.

Part 2: Review of Past Research (see Appendix 1)

The review has presented a number of important inter-related factors to consider in any study of producers' perceptions of training opportunities. We can see that the following characteristics appear to be important influences on producers' levels of participation in, and satisfaction with, training opportunities (Table 1).

Table 1 Summary of characteristics suggested by the literature to be influences on producers' level of participation in and satisfaction with training

Producer characteristic	Content characteristic	Delivery characteristic
General attitude to new ideas	Relevance – timeliness	Credibility of presenter – expertise and localness of knowledge
General attitude to training and education	Relevance – localness of information	Length of training session
Perceived benefit of the specific training topic	Relevance – relationship to producers' needs	Suitability of timing of sessions
Fit between delivery mode and preferred learning style	Quality of information	Level of peer-to-peer and producer-presenter interaction
Time availability	Amount of information presented	Similarity of producers involved
Interest in social interaction at the time	Accessibility of language and concepts	Localness of location
Ability to take in new information at the time		Value for money

Many of these characteristics are dependent on each other. In particular, there is a flow of influence between some producer characteristics and their perception of proposed training characteristics. The implication is that there is no "one right answer" for training producers. Although in previous studies some producers have reported preferences for localised information or strongly interactive sessions, for example, this is unlikely to hold for all producers. Just as producers' circumstances, styles and roles vary enormously, so too may their needs and preferences around training. Not only does this highlight the importance of further research into producers' training needs and preferences in general, but it highlights the need to specifically research particular groups of interest, such as meat producers. It also points to the need for research that takes into account producers' broad circumstances as well as specific perceptions of training, as this study does.

Part 3: Methodology (see Appendix 2 for more detail)

3.1 Introduction

The question of how we do research is intimately tied to the question of what we research. A study into producers' training needs could take one of two main approaches. One, it could focus on breadth, sacrificing depth of questioning in order to survey as many producers as possible and enhance the probability of the sample representing the total population of interest. This is the approach commonly used in market research into product demand. While the present study has an important market research angle, it also adopts a different approach, bringing it more in line with social research into producers' attitudes to training of the kind discussed above. In this second approach, the focus is depth. The aim is less about achieving representativeness and statistical significance in answers to narrowly defined questions and more about achieving insights into the relationships and meaning behind responses. It is important to keep in mind that the present study combines elements of both of these epistemological stances.

The numerous empirical studies that have been conducted on the effectiveness or attractiveness of various training activities and delivery methods have generally utilised interviews and questionnaires with producers as a means of gathering information. Interviews, often semi-structured in nature, have generally been conducted in-person or over the phone. Questionnaires have been mostly in a written format and mailed to respondents, while a few studies have also relied on an analysis of ABS data. Case studies and focus or discussion groups have been used occasionally to enrich quantitative data with qualitative information. Evaluations of specific programs have also formed the basis of some reports.

Below, elements of the sampling strategy are first discussed, including possible sources of sampling related error in the data. We then turn to the structured interviews and the role of the partner organizations and local interviewers, including an evaluation of the strengths and weaknesses of the local interviewer method. Following a description of the design of the questionnaire used by interviewers, the data analysis methods are then outlined.

3.2 Sampling Strategy

3.2.1 Sampling frame

Potential producer interviewees were selected using a convenience sampling approach based on the MLA member list. Meat producers on the list are those who pay a livestock transaction levy to MLA (all commercial meat producers) and then sign up for free to MLA, either intentionally such as through the MLA website, or by providing their contact details at a MLA event.

It is important to note that the use of this list as a sampling frame reduces the randomness and thus generalizability of the sample. MLA membership allows members to receive various publications and discounted entry to MLA events, including Meat Profit Days (http://www.mla.com.au/ AboutMLA/MLA+membership.htm). It is therefore possible that the MLA member group contains producers who are more active in the industry than is the average for the whole red meat producer population. This potential bias was not considered a strong enough potential influence on the results to warrant using a less convenient and more resource-intensive sampling strategy, especially given that the style of research being undertaken was not aimed solely or even primarily at achieving representativeness.

The fact that numerous potential interviewees were reportedly surprised to find that they were MLA members when they were called about an interview also suggests that MLA membership is not a strong marker of a particular identity type, including one (such as 'innovator') that would strongly bias the data. Moreover, MLA members are a group of natural interest to MLA.

3.2.2 Sample Size

The target sample size was determined by two steps: first, the decision that the study be focused on four states of interest (discussed below); second, the decision to use 50 interviews per state. This number of interviews per state represents a compromise between a commitment to the labour intensive method of on-farm interviews - in order to increase ecological validity, qualitative data collection, the number of group interviews and the commitment capacity of potential research participants - and the need to take into account time and cost constraints for the partner organisations and the project as a whole. The total target sample of 200 represents a relatively large sample for this kind of work. It needs to be understood, however, that it does not lend itself to the more intensive statistical testing that can be done on larger samples (eg. 1000 units) used in rapid, indirectly administered, purely quantitative surveys.

All members of a farm business were invited to participate in the interviews. Consequently, interviews frequently involved more than one person. Each individual's responses were recorded separately. This approach entails the risk that responses of interviewees from the one farm business are correlated and so 'over-represent' the points of view they share. However, given that from a training perspective (as opposed to a levy perspective, for example) MLA is interested in the number of individuals (not farm businesses) that attend training, it was felt that individuals' responses were important. In addition, the conflation of differences of opinion between members of a farm business that would occur if only one response was recorded per farm business would be artificial and misleading. Such conflation could disguise potentially important differences between age groups and the genders, for example, which have been found previously to be important influences on attitudes to training (Section 1.4.2.4 above). In accounting for individuals, the sample size was expanded to 297.

3.2.3 Sample Design

In consultation with MLA, the interviewee sample of southern meat producers was clustered geographically and agriculturally.

First, NSW, Victoria, Western Australia and Tasmania were chosen as the southern states of interest. As mentioned above, South Australia was excluded because it was decided that visiting 50 farms in a region would involve an impractical amount of travel, given the extensive nature of much meat production in the state.

Second, a single region within each selected state was chosen purposively according to the meat production system it is dominated by. Together, the four regions cover each of the four main red meat production systems or market segments in southern Australia (Table 2).

Table 2 The meat production system each region represents

State	Region*	Meat production system
NSW	South-West Slopes (Harden)	Specialist Lamb
Victoria	Wimmera Mallee (Birchip)	Mixed Lamb/Grain
WA	Central Agricultural Region (Corrigin)	Mixed Lamb/Wool/Grain
Tasmania	Northern (Devonport)	Specialist Beef

* The town in brackets is the centre point of an approximately 100km radius circle used as the initial sampling area.

The sampling areas used are not strictly 'official' agricultural zones or other divisions. Although they are associated with recognisable agricultural zones, they consist of loosely defined circles of approximately 100km radius situated within broader zones dominated by the meat production system in question. They are also shaped by the partner organisations' areas of interest, being centred on a town of convenience to them. This alignment with the area of interest/work of the four regional organizations was important to their ability to participate.

Lists of MLA members for each region were generated from the MLA database based on members' contact details and an inputted list of towns in the region. This produced 100-200 names per region. A random selection of producers from each regional list was sent a letter introducing the research (Appendix 1). A random selection of those who were sent letters was then called to invite them to participate in the research.

Due to a very high level of non-responses and refusals among potential interviewees (discussed below), this process was repeated. Although the whole initial member list for each region was phoned, the target of 50 interviews in each state was not reached at this stage. The sampling area in each region was therefore expanded slightly beyond 100km radius and an additional member list for each region was generated based on further towns. Ultimately, these additional lists resulted in more interviews being arranged. However, in all but Tasmania the target of 50 interviews was not reached even when each entry on the additional list was exhausted. 190 interviews were conducted in total (Table 3).

Table 3 Number of interviews by state

State	Number of interviews
NSW	47
Victoria	40
WA	39
Tasmania	64
Total	*190*

Tasmania was over-sampled by 14 interviews (due to an organisational error within the partner organization). Although the state is thus over-represented, due to a lack of a defined database of the target population the data was not weighted and additional interviews were not cut out, given the value that such data adds. Interpretation of the results is instead managed against the background knowledge that any Tasmanian specific findings may be slightly over-represented.

3.3 Survey Design and Data Analysis

The design of the survey used in the structured interviews (Appendix 4) was guided by the objectives of the project, the influences on training such as demographic variables suggested by the literature (Section 1.4) and - in contrast to research that simply asks producers about their training preferences – by the discussion of factors affecting felt needs in Section 1.5. In this way, it collected data about multiple indicators of and influences on producers' attitudes to training. The use of multiple indicators not only allowed concepts to be explored from different angles, but minimised the risk of data collection error.

Quantitative and qualitative data was collected through a range of closed and open-ended questions. Quantitative questions were predominantly based on Likert scales, which allow an interviewees' response to a question to be distilled down to a point on a 5-point attitudinal scale. Such hard measures were complemented by qualitative data about the direct and indirect reasons behind such responses. Open-ended questions were used to allow interviewees to express their opinions about training issues beyond the constraints of pre-determined categories, lending the research greater ecological validity. Although such questions carry a greater risk of misinterpretation by interviewees, part of their value actually lies in how interviewees interpret them, providing insights into what is top of mind for the interviewees.
All hand-written interview data was entered into Excel. Code-lists were developed for responses to most open-ended questions by grouping the responses with similar themes to allow the results to be quantified. Such coding reduces the richness of the data but allows trends and their relative strengths to be detected. To preserve the richness of the data, direct quotes were also retained and a selection are presented in the results section in order to help interpret the quantitative data.

All quantified data was entered in SPSS statistical software for analysis. Two main methods of analysis were used, namely frequency distributions (counts and percentages) to describe the variability of individual variables for the total sample, and cross-tabulations to explore the relationships between variables in accordance with the research objectives.

In the report, the focus is on presenting the results as they were found. The nature of the sample is such that it is inappropriate to make formal statistical inferences or formal statistical comparisons between groups of producers. Statistical inference requires a randomly selected sample from a defined population where the sample elements have a known chance of selection. For the reasons outlined above, this does not apply to our sample. Statistically based comparisons were not possible because the size of some individual segments (eg. age groups) is too small to make comparisons meaningful. Although this means that the statistical significance of relationships between variables cannot be assessed, the relationships themselves are made apparent by cross-tabulation.

Part 4: Results (see Appendix 3 for more detail)

4.1 Overall

The producers surveyed were virtually all mixed farmers and represented a wide range of age groups, education levels and farm sizes.

Across the sample, the general importance attributed to training was high, challenging – at least for meat producers - Kilpatrick and Rosenblatt's (1998) assertion that training is not well accepted within the farming community. A large proportion also reported that they have a history of participating in training and have been satisfied with the training activities they have participated in.

Notably, however, there is not a clear linear relationship between the importance producers' attribute to training and the likelihood that they have participated in training in the past or will participate in the future. A high proportion of those who consider training to be important still do not engage with it.

Producers' engagement with training varies across the states. As described in the section below, NSW and Victoria producers typically have a moderate level of engagement, WA producers typically have a high level of engagement, and Tasmanian producers typically have a low level of engagement. Given the slight over-representation of Tasmania producers in the data, this suggests that the overall level of engagement in the total sample may be marginally higher than it appears.

The most common topic areas of past training are chemical handling, the wool industry, grazing/pasture management and livestock management. The vast majority reported that they have used at least some of the training they have done to make changes on their farms.

Producers most commonly reported animal management and observation skills as their strengths. 88% rated their knowledge of hands-on animal management as a 4 or 5 out of 5. Nearly three quarters of producers also rated their knowledge of financial management as high to very high.

The most common means by which producers have developed their knowledge and skills is experience, with training a distant second. The many who reported experience as a source of knowledge were least likely to have any intention to train in the future.

Indicative of producers' felt knowledge needs, climatic and financial issues emerging strongly as the most frequently reported challenges facing producers, while technical production and to a lesser extent drought emerged strongly as the areas producers are currently facing major decisions in. Producers were less consistent in the areas they want to improve in. Compared to the dominance of certain topics at the felt knowledge needs level, this indication of their felt learning needs was characterised by a relatively diverse array of topic areas, highlighting the personal nature of the selection. That said, the top three nominated areas for improvement (marketing, financial management and computer skills) also represent a narrower range of topic areas than the felt knowledge needs, all being in the broad realm of business management. Analysis of these and the other nominated felt learning needs according to producers' training intentions suggests that marketing, animal management and cropping are the most common felt training needs across the sample. However, again what is most noticeable is how diverse and therefore personal producers' felt needs at this level are.

Table 4 Summary of specific topics relevant to different levels of felt need as reported by producers

Felt needs	Specific topic
Felt knowledge needs	Managing climate and especially drought Financial issues Technical production issues
Felt learning needs	Marketing Financial management Computer skills
Felt training needs	Marketing Animal Management Cropping

It is notable that two of the areas commonly nominated as felt learning or training needs – financial management and animal management – were also commonly nominated by producers as areas they feel they have a strong knowledge in (ie. they form a core part of their current knowledge base). This suggests that possessing a strong knowledge of an area does not necessarily eliminate that topic area as an area of felt need, but may rather highlight to a producer how complex it is and how much more they have to learn about it. That financial issues are a major challenge and technical production issues are a major decision area for producers further helps to explain why these areas emerged as both strengths and felt needs.

In spite of the large challenges they are facing, most producers stated that they are planning to increase their productivity or grow their businesses in other ways. More than a fifth of producers, however, are planning on selling their farm.

Significantly, producers' general felt need for training is low. Despite a seemingly high level of enthusiasm for training, and the existence of numerous felt learning needs that could be addressed through training, few producers are intending on undertaking any in the near future. Only about one third of producers have plans for training in the next 6 months. The possibility that this is because the proposed window of time is too narrow to capture a larger group of producers who intend to train is not supported, as an even smaller proportion - less than a fifth - have plans for training in the next 1-2 years.

There appears to be a weak relationship between whether a producer has participated in training in the past and whether they are intending on participating again in the future. This seems to be determined in part by the type of organization that provided the producer's original training, with private sector providers seeming to generate a positive feedback loop and Catchment Management Authorities seeming to generate a negative feedback loop, maintaining the relative proportions who train with each type of organisation. It is significant that at least some of the past training with a CMA seems to have been of a mandatory nature, which some producers reacted against. Only about a fifth of producers had participated in training provided by a national RDC and a similar proportion of them were intending on going to any training in the future.

Part of the reason relatively few producers are intending on attending training in the future may be that they are instead addressing their felt knowledge and learning needs by talking to professionals or using their own, their family's or their peers' experiences, both of which were reported as common sources of assistance with decision making.

Although many producers have used training to make an on-farm changes in the past (mentioned above), less than a fifth currently use previous training as a source of information for current decisions. Producers instead reported a heavy reliance on printed material and other information sources such as the internet. Satisfaction with the usefulness of this information is high, although about a quarter of producers felt it needed to be more concise and targeted at an appropriate level for them (which may be higher than what is available). Some also mentioned it is too commodity specific for mixed farmers.

A further reason producers are less interested in future training than may be expected is suggested by the serious obstacles producers reported they need to overcome in order to participate in training. Key among these is a lack of time. The findings highlight that the time and additional financial costs involved in attending training represents a significant commitment and thus risk for busy and financially conscious producers. Producers' decisions as to whether to commit to a training event are based on their assessment of how relevant and generally worthwhile the experience will be. While the goodness of fit between a training topic area and their felt training needs is part of this assessment, also involved is a sense of whether the producer is likely to learn something new in the time available. Pertinent here are the obstacles to learning new things that producers reported, such as a lack of motivation (mental energy), which may reflect in part the impact of the drought. Some producers also emphasised that subsequent decisions about whether to implement any new learning on-farm represent a challenge and risk for them. These concerns are also involved in their assessment of the likely usefulness of a training activity.

If they are to attend training, most producers - especially if they were university educated - reported a preference for learning the general principles and management applications of a topic. These preferences were especially prevalent among those with the intention to attend training in the near future. In terms of delivery format, small group discussions, demonstration sites, farm visits and on-farm practical sessions emerged as most popular. E-learning was relatively unpopular, with only about a third indicating interest in receiving training in this form, most of whom are young and highly educated. 20% indicated a preference for workshops.

Overall, the main content and delivery components of producers' felt training needs are summarised in Table 5. It needs to be kept in mind that the significance of these results is weakened by the finding that, as mentioned above, producers generally have little felt need for any training.

Table 5 Summary of the content and delivery components of producers' felt training needs

	Content	**Delivery**
In general	General principles Management applications	Small group discussions Demonstration sites Farm visits
Topic specific	Marketing Animal Management Cropping	On-farm practical sessions for practical topics

In terms of the specific topics MLA has proposed or is running training in, interest in learning more about Cost of Production is moderate. 69% of producers responded positively to the idea and 56% indicated they are interested in actually attending training in the topic. Training based on a discussion group or workshop format was most commonly suggested for the topic. Approximately half of the producers were interested in the 2+1 day workshop format proposed by MLA.

Interest among WA and Victorian producers in learning more about The Crop to Livestock Transition was slightly weaker, with approximately half responding positively to the idea and the same proportion indicating interest in the 2 day workshop format for the topic proposed by MLA. Among NSW producers, 65% indicated that they are interested in attending a 2+1 day workshop in Sheep Nutrition.

It is notable that producers expressed higher levels of interest for these proposed training opportunities than they did in terms of their general intention to train in the future. This suggests that their interest in the specific training opportunities posed by MLA is unlikely to translate into actual training participation and/or that many producers are opportunistic and open to suggestion in formulating their training plans.

PART 5: Discussion

In considering the context of this study, it is important to note the extended dry or drought conditions that have affected each of the study areas. Figure 1 below illustrates the rainfall deficiencies the study areas experienced in the 24 months prior to the interviews.

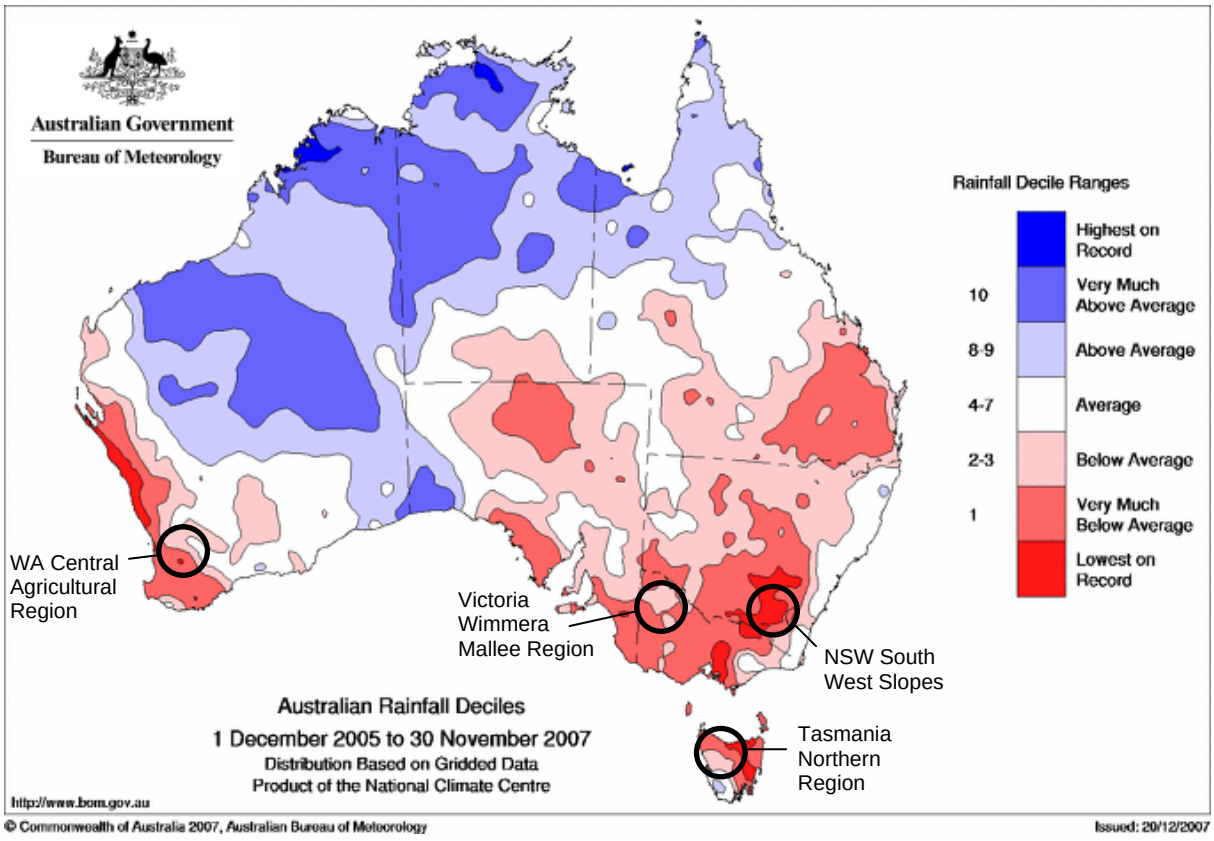

Figure 1 Australian rainfall deciles for the 24 months prior to interview completion, with study areas marked by bold circles (http://www.bom.gov.au/cgiin/silo/rain_maps.cgi?map=contours&variable=decile&area =aus&period=24month&region=aus&time=history&steps=2).

Stress caused by the challenges associated with drought is relevant to this study at two main interrelated levels: one, its effect on research participation; and, two, its effect on training participation. At both levels, drought can reduce producers' motivation and ability to participate. The 'Critical Breaking Point' report commissioned by Birchip Cropping Group found this to be the case for producers in the Wimmera Mallee region, especially for those hit with the need to water and feed stock (BCG 2007). Some producers chose not to be involved in the research because of a lack of time or energy to do so, while some of those who did participate spoke of their lack of motivation to attend training activities. Producers commonly related both responses to the drought. A lack of interest in training is reflected in a recent report on the DAFF irrigated industries drought workshop program for the dairy industry that states that:

> *It is currently (last 15 months) exceptionally difficult to get producers to engage in activities, even when they [the activities] are free and of clearly significant value' (Irrigated Industries Workshop Program – Dairy, 'Dairy Moving Forward: Dealing with today, planning for tomorrow', Oct 07, p.8).*

It is important to note, though, that training participation may be encouraged by the drought. Stress induced by drought and other challenges can create a hunger among producers for new information, skills and solutions as they seek new ways to tackle problems. The BCG (2007) report, for example, found farming families' interest in information about financial management and drought-specific best practices has been piqued by the drought. While this desire for new information does not remove the obstacles to producers' motivation and ability to actually attend training in order to receive such information, it could conceivably increase participation rates. In all of these ways, the drought conditions in which this research was conducted have a bearing on the results presented.

5.1 Investigating "felt needs"

5.1.1 Distinguishing felt needs from related concepts

To complete this introductory section, we need to consider in more detail what "felt needs" mean, given the centrality of the concept to this research project.

In particular, we need to understand how felt needs relate, in principle, to the following five points:

- the challenges producers face and the knowledge base they have to draw on;
- the knowledge gaps that producers are motivated to address through training;
- the relationship between producers' past and future training;
- the relationship between training, learning and practice change; and
- the training needs that others (such as MLA) perceive producers have.

5.1.2 Three levels of felt need

At base, producers' felt needs can be thought of as gaps in their necessary knowledge base. The word 'necessary' highlights that not all producers need the same knowledge and skills. A producer's knowledge gap at any one moment is defined in relation to the particular set of demands upon them and the knowledge base they have to face those demands. The question is to what degree do the demands and current knowledge base overlap? Any demands unable to be addressed through the current knowledge base highlight producers' "felt needs" at that time.

In considering the role of training, it is important to distinguish three levels of 'felt need':

- Felt knowledge needs
- Felt learning needs
- Felt training needs

First, as described above, there are 'felt knowledge needs': areas of knowledge or skill that an individual determines they need to use. Second, some of these knowledge needs will be things that an individual wishes to address by outsourcing the knowledge (eg. to a consultant) and some will be things they wish to address by acquiring the knowledge themselves. The latter approach defines what subset of an individual's felt knowledge needs translate into felt learning needs. Third, an individual can address their felt learning needs by self-educating - such as through reading and talking to others to acquire the desired knowledge - or they can address their felt learning needs by seeking out formalised training. The latter defines what subset of their felt learning needs translate into felt training needs.

Rather than assuming that felt knowledge needs are automatically felt training needs, it is important to consider all of the options that individuals have for addressing their felt knowledge needs. That not all knowledge gaps are addressed through the personal acquisition of knowledge and not all personal knowledge needs are addressed through training is a reflection of four things:

- the complex demands that are increasingly being placed on producers, making it difficult for producers to reduce or even maintain the size of their knowledge gaps;
- the relatively narrow (production-based) knowledge base that some (older) producers have relative to modern demands upon them;
- producers' attitudes towards personally acquiring skills and knowledge versus alternative methods of addressing one's gaps (outsourcing the expertise); and
- producers' attitudes towards using formalised training or alternative means (eg. reading) to acquire the desired skills and knowledge for themselves.

Producers increasingly face large gaps in their skills and knowledge that consist of many competing areas. The trick for them is to distinguish strategically and pragmatically what depth of knowledge they personally want to have in each competing area and then to work out how they are best off attaining it.

Producers' decisions as to whether to pursue personal knowledge acquisition (learning) through training is influenced by their general attitude to formalised training. This is influenced, in turn, by their past experiences of such training. As discussed in Section 1.4.2.4 above about attitudes to education, a lack of familiarity with or negative experiences of formalised training is likely to encourage producers to seek alternative means of seeking knowledge or to look for ways of avoiding having to acquire such knowledge for oneself. A negative experience with training may be based on a producer's lack of satisfaction with the content and/or the delivery of past training activities relative to their initial motivation to attend training. Producers' interest in attending training can also be topic specific, and also involves their preference for the kind of content (eg. cases studies as opposed to theory) they want to receive through training.

Another reason felt learning needs do not necessarily equal felt training needs is that the latter can stem from motivations other than a desire to fill a knowledge gap. As seen in Section 1.4 above, research into different training delivery modes has highlighted the multiple benefits producers can gain from training experiences, notably those involving significant inter-personal interaction. Such interaction may be valued not only because it can enhance learning, but because of the social benefits for producers it can lead to, such as networking, identification with

others, relaxation, and fun. In turn, producers may be seeking to learn not only in order to apply the learning and achieve practice change, as it is often assumed, but: in order to inform themselves of different opinions and options (as discussed further below); because of the pleasure of learning; or because ongoing learning is itself an important goal for them. Thus, the relationship between knowledge gaps and a desire for training is not automatic or exclusive.

The content of training is not the only aspect of felt training needs. Mode of delivery is also important. As discussed in Section 1.4 above, much research has documented that producers have preferences for how training is presented. It is also possible that they are topic-specific. These preferences can be considered needs when the success of training is measured by its ability to satisfy producers and, associated with this, to convert training into learning and even practice change (discussed further below).

Overall, felt training needs are a subset of felt learning and felt knowledge needs and consist of separate content and delivery components (Figure 2).

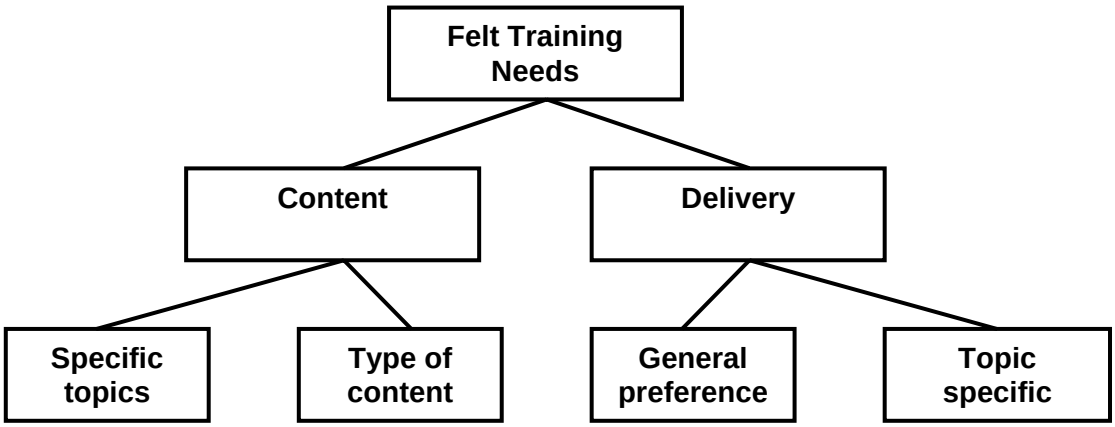

Figure 2 The content and delivery components of producers' felt training needs

Finally, it is significant that one of the reasons producers' typically prefer interactive delivery (described above) is that it often allows their felt need for certain training content to shape the training agenda. It is important to note, though, that participatory delivery methods and a participatory approach to training content (content that addresses a producer's felt training needs) are quite distinct and one can and often does exist without the other.

5.1.3 Training, learning and practice change

If a producer is primarily motivated to attend training by a pre-determined desire to change their practice in a certain way, the extent to which past training has enabled them to make such a change – to meet this felt training need - will shape their assessment of its value. However, if a producer is motivated to attend training in order to learn about options for practice change, their satisfaction with the past training will be based on whether they ultimately felt able to make an informed decision about the practice changes available, not whether they decided to and were able to implement a particular change.

This distinction highlights the importance of untangling the difference between training, learning and practice change. Although the relationship between the three is often assumed to be linear and automatic, training is not always pursued solely for the benefits of learning, as touched on above. Moreover, training does not always lead to learning – in the sense of retained and usable knowledge - even if this is the participant's prime motivation.

There are many reasons why producers may not learn effectively from a training activity, including: disinterest in the content (a mismatch between the content and their felt training needs); poor quality delivery; a mismatch between the way in which the training is delivered and a producer's preferred learning style; inadequate time for learning at the training activity; a lack of follow up training; and the forgetting of initially retained knowledge due to a lack of use.

The last point highlights the second aspect of this equation, which is that learning does not always lead to practice change. While this may be unintended, as the many obstacles to a producer implementing learning interfere with their desire to do so, it may also be intentional. There is an important element of choice in converting knowledge into practice change. A producer may choose not to apply a new approach they have learnt about because they decide on balance that such change is not best for them. There is an enormous amount of literature devoted to understanding what factors producers weigh up in deciding whether to pursue a new innovation they have learnt about. Predominant among these factors are producers' goals, circumstances and perception of the messenger, what other practices are available to them (including their current ones) and what they perceive the transaction cost of change to be (Figure 3).

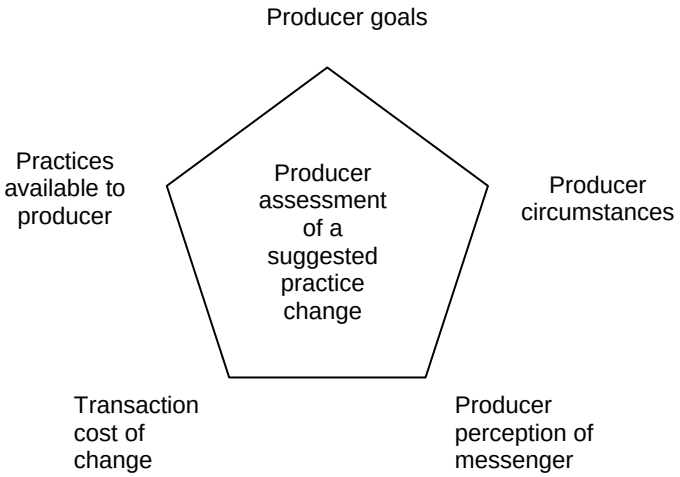

Figure 3 A summary of the main factors found to affect whether a producer takes up a suggested practice

The Sustainable Grazing Systems research adoption model that the MLA Communication and Research Adoption program is based on (MLA Strategic Plan 2006-2011) recognises the lag and potential disconnect between a producer's decision to learn more about a potential practice change and their decision to actually build the practice change into their farm operation. A critical 'Exploration/Trial phase' exists between these two decision points, during which a producer may rule out a suggested practice change (Figure 4). It is important to recognise that such a decision does not devalue the learning the producer has experienced about that practice change.

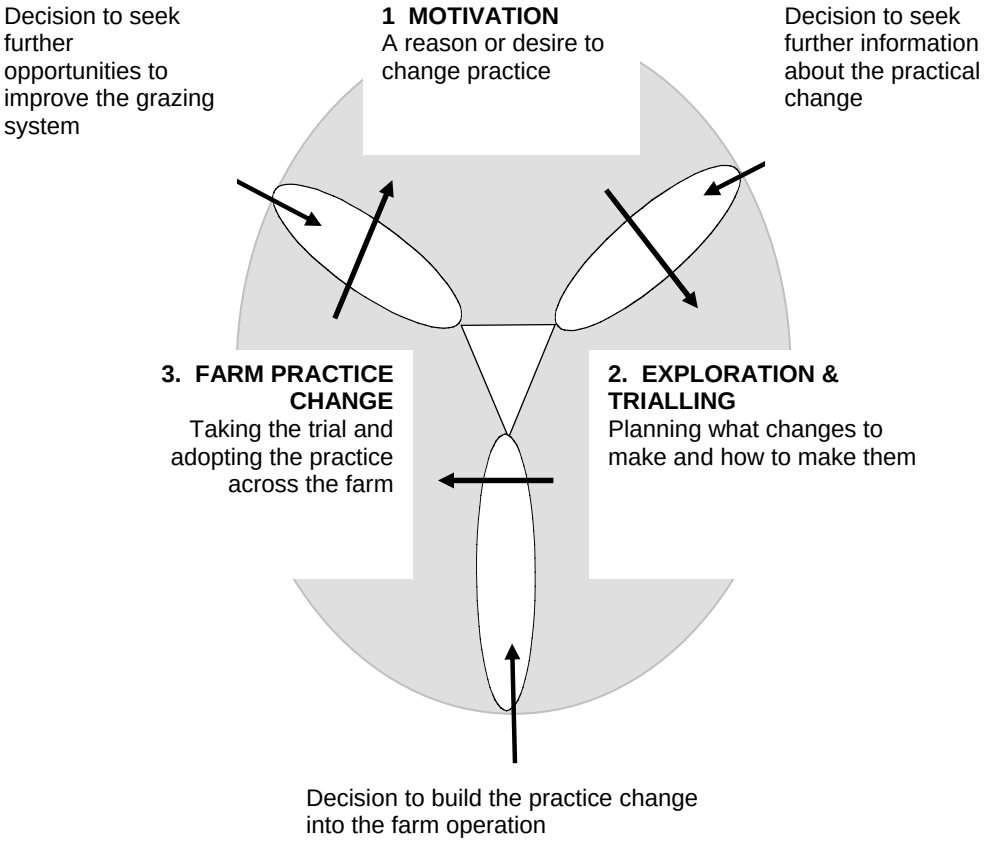

Figure 4 The SGS research adoption model used by MLA (MLA Strategic Plan 2006-2011, p. 24)

Training is potentially an important tool for producers at each stage of the above cycle, often supporting their decision-making as they consider making the transition from one stage to the next. The question for training providers like MLA is whether the training they provide sits within the above cycle. The cycle represents a move from a problem-oriented perspective (motivation to change) to a solution-oriented perspective (motivation to apply a certain solution). Likewise, some training aims to highlight a problem area for producers and explain the options available, and other training aims to help producers adopt a particular solution to a given problem. The success of training for individuals depends on the goodness of fit between where the producer is on the above research adoption cycle – what their felt learning needs and felt training needs are - and where the training they attend is aimed at.

5.1.4 Felt needs and “externally perceived needs”

Perhaps the way in which producers’ felt needs are most commonly understood is in contrast to what we can call “externally perceived needs” – that is, knowledge gaps that others, such as training providers, perceive producers to have. These gaps may arise out of a change in producers’ operating environment that they are considered to need assistance to identify and understand the implications of (eg. changes in the regulatory environment, climate change). In this case, the externally perceived need takes the form of problem identification and understanding. Alternatively, the apparent knowledge gap identified in producers may arise out of a belief in a persistent failure on the part of at least some producers to respond in an appropriate way to existing challenges. In this case, the externally perceived need is that producers move towards a desired way of *doing* things.

The main point of tension between felt needs and externally perceived needs is the issue of which of them has the closest bearing to reality, to producers' "actual needs". Who is the best judge of what producers need? Producers themselves or those who claim to see their situation more objectively and broadly?

It is helpful here to consider the Johari window, a tool for systematically thinking about the perspectives involved in human interaction (Figure 5).

	Known to Self	**Not Known to Self**
Known to Others	Open	Blind
Not Known to Others	Hidden	Unknown

Figure 5 The Johari Window of perspectives involved in human interactions

If we take the Self to be the producer and the Other to be an 'outside expert' like a training provider, we can see that, as for all of us, producers' actual needs stem from all four quadrants. The open quadrant is where both parties share a perspective about the producer (eg. that the producer needs training in marketing or computer), enabling communication and action on the issue. The unknown quadrant is where neither party knows something pertinent about the producer, such as their need for succession planning. The hidden quadrant is where the outsider observes something about the producer that the producer is ignorant of, such as a biosecurity risk they face or the leakage of their fertiliser nutrients into the water table.

Finally, the blind quadrant is where the training provider is ignorant of something pertinent about the producer (eg. their skill level in a certain area or their philosophy of low input farming) because the producer has not been asked about it or because they have not disclosed the information. This last quadrant is where most producers' felt needs and, particularly, felt training needs reside.

To improve understanding and the provision of appropriate training opportunities the open quadrant needs to be expanded in both directions. Training providers can offer producers training based on observations about the situation the producers are in, reducing producers' blind spots. Producers can disclose information about themselves, guiding training provision by moving information from the hidden quadrant to the open quadrant. This may happen within a training activity conducted in a participatory manner, such as a discussion group, where participants' needs are allowed to shape the agenda. It may also occur through a process of social research - such as this project - where the needs of some producers are explored in order to shape training provision for a wider producer population.

Producers are far more likely to engage with and learn from training activities that address their felt training needs than those that do not. Like the open quadrant, we need to aim for overlap between felt training needs and externally perceived needs to optimise the chances of success of any externally initiated training (Figure 6).

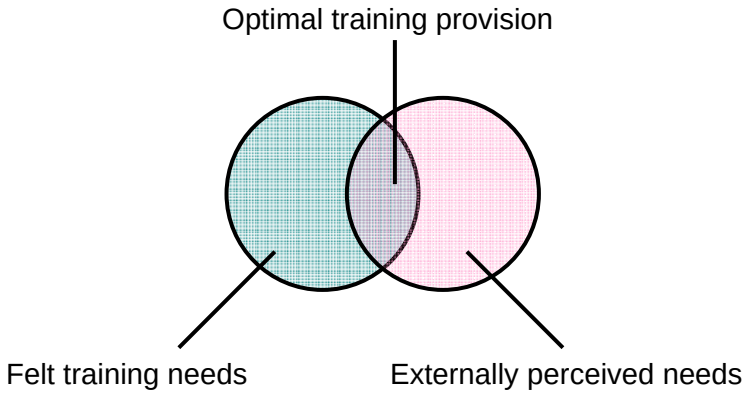

Figure 6 The area for optimal training provision as the overlap between producers' felt needs and externally perceived needs

This creates a challenge for training that derives from an externally driven campaign to elicit a certain change among producers – perhaps across the agricultural industry as a whole or a portion of it - irrespective of the initial popularity of the change among producers. It is here that the importance of the first stage of the SGS research adoption model – Motivation – needs to be appreciated. Skipping this stage and targeting training at the subsequent Exploration/Trial stage is likely to be ineffective or even counterproductive among those producers who have not been motivated to accept the topic into their personal felt knowledge, learning and training needs in the first place.

5.1.5 Viewing training in context

The results presented in this report highlight the complex array of variables in which training needs to be understood. The general lack of clear cut relationships between factors such as the importance attributed to training and participation in it, or decisions faced by producers and their felt learning needs, illustrate that it is unwise to assume that participation in training is a logical and automatic response to any given kind of situation. In particular, it is unwise to assume that an information need obvious to an outside observer is best addressed by that producer through training.

The results highlight that training competes with many things for the time, attention and money of producers. Like subsequent learning and practice change efforts, any one training event demands a certain level of commitment from producers. That commitment represents a risk for them as they seek to best divide their finite and often pressured resources between numerous valid work, life and training demands. It is a risk in which the expected value of a training event is weighed up against what the experience will demand of producers. And it is a risk that it seems many producers are unwilling to take for all but the most guaranteed of training experiences. While it seems some producers have a general propensity towards training – excited by the prospect of learning new things and/or by the broader benefits training activities can provide - others have a general propensity against it and most seem to assess the value of such opportunities on a case-by-case basis.

Even if a producer decides to attend some training, the decision may of course not be followed through. Conceiving of training as a form of practice in its own right brings into focus the discrepancy that can and often does exist between attitude and behaviour, which in this case is

between a producers' intention to train and their successful achievement of this goal. An intention to train within the next 6 months moves a producer from the first Pre-Contemplation stage of Velicer *et al.'s* (1998) 5 stage behavioural change model to the second Contemplation stage (see Section 1.4). It does not necessarily move them on to the Preparation stage, in which one makes concrete plans to change one's practice (ie put on hold normal work and attend training) and it certainly does not move them automatically on to the Action stage, in which one actually implements the desired practice change, or to the Maintenance stage, in which the new practice (eg. regular training) becomes habit. The findings above detail the many obstacles that can thwart producers' intention to attend training events, such as competing time commitments. These obstacles and Velicer *et al.'s* model caution against interpreting the proportion of producers who reported an intention to attend training in the future – low as it is – as the proportion of producers who *will* attend training in the future.

The results also highlight the way in which training sits in competition with other information sources. When producers are assessing the time commitment demanded by a training event, they are doing so not only in relation to other demands on their time, but in relation to other means through which they can gain the information they expect the training event will provide. Such means encompass alternative ways of personally acquiring the knowledge, such as through reading or talking to others, and alternatives to personally acquiring such knowledge at all, such as outsourcing the expertise. These alternative modes of sourcing and using required information may be chosen as more targeted, time-efficient or easier options than attempting to learn in an unknown group environment. Given the obstacles that exist in transforming training into learning and potential practice change – the difficulties of learning new things that producers reported such as having time and support to assess the relevance of new information for their situation – producers may not choose training events as the best route to acquiring or using new information. In addition to respecting and working with this choice, training providers need to recognise that in promoting a particular training event they need to not only explain to producers why they should care about the topic – motivating them to question their own practices in relation to it – but they need to justify the advantages of adopting *training* as the route to exploring such potential on-farm practice change.

Furthermore, training providers and RDE organizations like MLA need to critically appraise which of the knowledge needs they perceive for producers are, they believe, learning needs for producers and which of the latter they consider are training needs for producers. That is, the same distinction between knowledge, learning and training needs can be as usefully applied to externally perceived needs as felt needs.

We come then to the question of what benefits training *does* provide. When is training the best option for producers? It is here that the role of training as more than mere information provision is apparent. In addition to the social benefits training events can involve, training sits at the nexus of information delivery, personalised hands-on experience and inter-personal interaction (Figure 7). Learning emerges from all three of these spheres. While a producer can learn about a topic on their own through quiet reading, at its best training augments an individual's discovery of new information with: an opportunity to personalise and try it out in some capacity; to talk with others (presenters and co-participants) about it; and to observe others' (producers or researchers) experiences with it. Together these explorations of can create a far deeper feeling for a topic than what is possible through mere engagement with decontexutalised information about it. By allowing inter-personal and personalised interaction with a topic, these components of an ideal training experience allow producers to begin to explore and trial new ideas, moving them further around 'the research adoption cycle'.

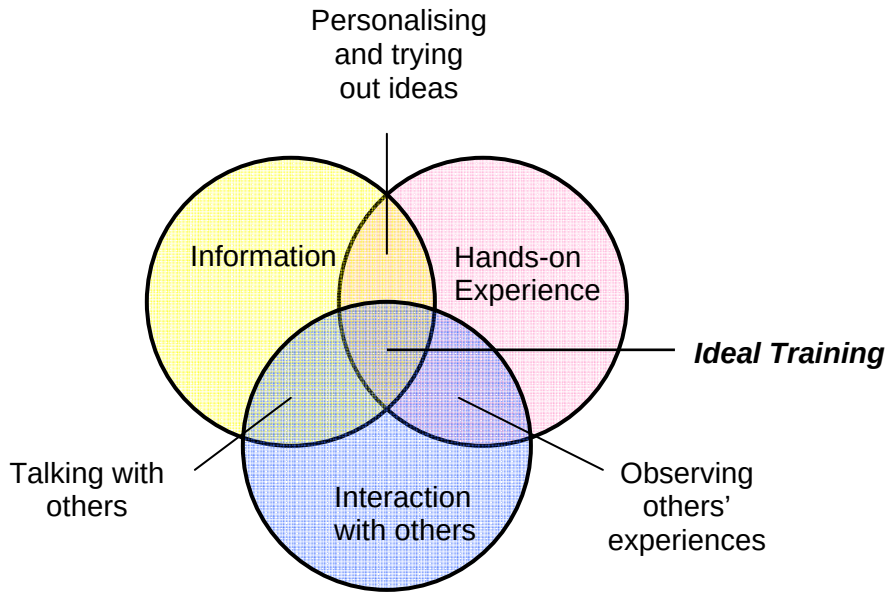

Figure 7 Ideal training as the nexus of information delivery, hands-on or personalised experience and inter-personal interaction

However, just as training does not necessarily lead to learning, learning does not necessarily lead to practice change. Although external observers predominantly use training to encourage practice change among producers, the relationship between the two phenomena is attenuated and non-linear. When we consider the behavioural change literature in light of training as a tool for trying to achieve practice change, we can see that people can be positioned at various points along the process. While training may help them to move through one stage, such as the Contemplation or Preparation stages of Velicier et al.'s behavioural change model, it will not necessarily move them through subsequent stages. Velicier et al. emphasise the need for on-going support if people are to achieve a fully internalised, implemented change. Comments by interviewees in this research suggest that such follow up is often lacking from training activities and that this lack is one of the main obstacles they face in transforming training into learning, and learning into practice change. Nicholson et al. (2003) similarly emphasise the need to appreciate where producers are in the three stage SGS research adoption cycle used by MLA and the importance of supporting producers through the difficult transition zones between stages.

One of the drawbacks of the SGS research adoption model is that its neat cyclical character implies practice change is an, if not automatic, then at least ideal consequence of a producer's exploration and trialling of a new idea. From an external observer's point of view this may be the case. But it is important to acknowledge that a producer's assessment of their options and the costs of change - encouraged and enabled by a training experience - may also legitimately rule out such a practice change for them. Such an informed decision and the confidence that can flow from it equates to the success of the process for that producer.
If success in the eyes of producers is what a training provider is after, it is learning through training that becomes their ultimate goal also, irrespective of whether producers take up or reject a potential practice change.

In summary, we need to appreciate the following points in considering the role that training can have in achieving practice change (Figure 8):

- producers may use sources of information other than training;
- producers may choose to by-pass learning new information for themselves and outsource it to others, who synthesise it and tell them about their options;
- felt training needs may not be realised through training;
- training may not lead to learning;
- training can provide benefits other than the learning of new information, which can be equally important in ultimately enhancing confidence and achieving practice change;
- learning often leads to greater awareness of one's options, not directly to practice change;
- greater awareness of one's options can enhance one's confidence, which can be as important in achieving practice change as the knowledge itself; and
- enhancing the confidence with which producers make decisions is a legitimate goal in itself.

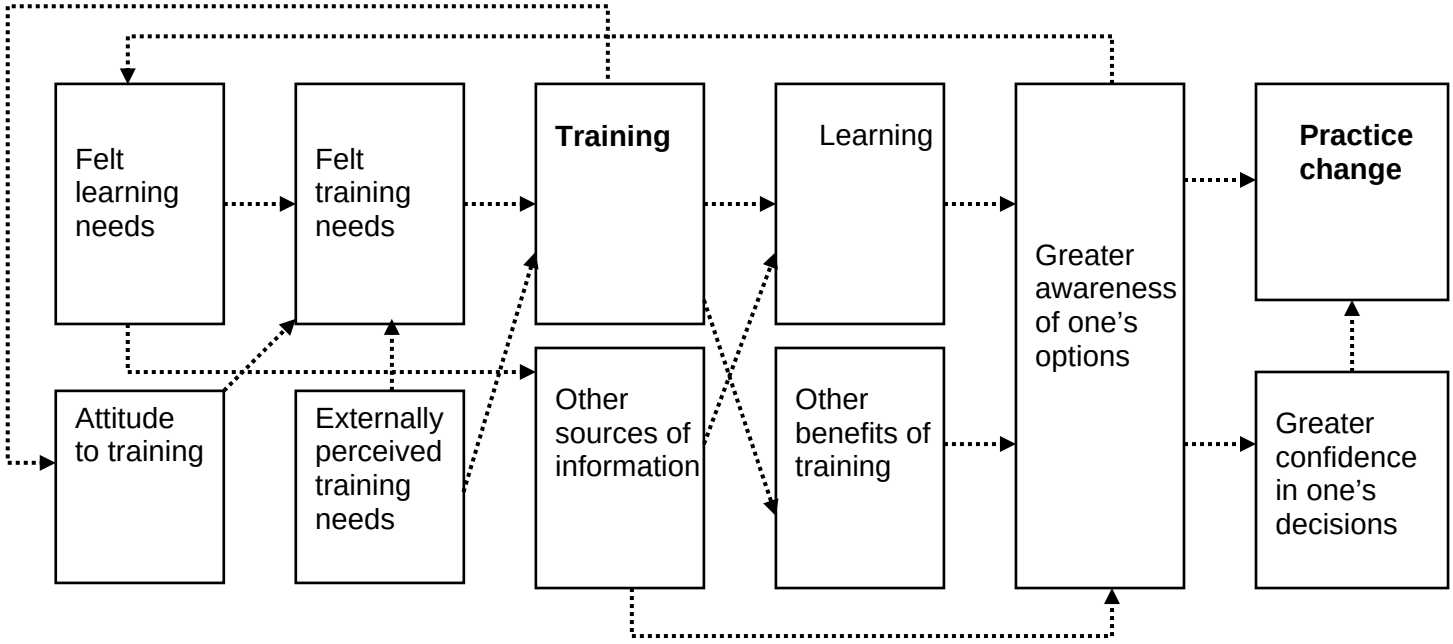

Figure 8 The role of training in achieving practice change (note: dashed arrows represent a possible but not automatic flow of influence and illustrate the range of relationships possible)

5.1.6 Viewing training topics in context

Just as the results highlight that training needs to be understood in context, so too do they highlight that training *topics* need to be developed and delivered with an awareness of the broader context in which they exist for producers. In particular, the results highlight three contextual elements that colour how producers view training opportunities:

- the large and fundamental challenges producers face in the agricultural environment, including the growing complexity of that environment;
- producers' decreasing ability to have a detailed knowledge of all aspects of that environment; and
- the complex, mixed enterprise character of most producers' businesses.

That climatic and financial issues emerged strongly as the most frequently reported challenges in this study underlines the fundamental role these two areas have for producers. Given the uncertainty and uncontrollability that characterise these factors in many ways, they also highlight

the complexity and difficulty of the environment in which producers are operating. Representing the broad natural and economic systems in which agriculture is situated, these challenges and their constant flux call up a plethora of learning needs for producers. A likely consequence of this diversity is that individual producers have relatively few specific learning needs in common, as seen in the broad range of areas of improvement nominated by research participants.

With relatively small numbers of employees, the division of expertise in most farm businesses is limited. Yet, as producers find themselves increasingly unable to keep up with the growing list of areas they need expertise in, a growing number of farm businesses are effectively expanding their staff and division of labour by delegating some specialised areas to outside advisors. In the context of a mixed farm - such as that in which 93% of the participants in this research operate - the number of specialised areas for a producer to manage can be overwhelming. Each specialised area represents a complicated part of a whole. Producers have to choose which of these individual complicated parts, if any, they will seek to understand intimately themselves and which they will delegate to others. These decisions are made in the context of producers' responsibility for the business in its entirety, which consists not only of complicated parts but also the various relationships between them and overarching factors such as uncertainty and unquantifiable social factors such as family demands and personal preferences (McGuckian and Rickards, in press).

Because of the complexity of farm businesses - which is not unique to mixed farmers but is especially acute for them - any information or training that a producer seeks out on a particular complicated component of their business will be of most relevance to them when it is couched in terms of the complex whole that the producer needs to manage. We saw in the results above that relevance is one of producers' key requirements for training. Almost by definition, relevance is difficult to achieve in a group-training environment for each individual. However, many meat producers have in common the challenge of managing complex farming businesses in the context of climatic and economic variability where themes like uncertainty, vulnerability and risk dominate and concerns like lack of time and the prioritisation of information are central. By emphasising how any particular training topic is positioned in the context of the overall business and broader natural and economic environment - whether by describing the effect of different climate scenarios on its key themes or how to access the best sources of detailed up-to-date information on the topic rather than teaching such details during the training, for example – training can be made more relevant for producers regardless of their particular circumstances.

The high level of importance producers place on learning general principles - expressed by 84% of research participants - further suggests that producers are after high-level information that can be most easily utilised at the decision-making level of their overall businesses. While some producers are after very detailed information about a particular topic, representing the advanced stage of decision making they are at for that topic, many approach training as a chance to better understand their situation and options, as represented in Figure 8 above. Training that is oriented towards mapping out a problem and options for dealing with it, as opposed to detailing a certain solution to a pre-determined problem, is likely to be better placed to meet this need and provide something of relevance to all producers.

A learning and training need is also explicitly created by producers' need to successfully integrate information and manage the complex whole of a mixed farm business. Frameworks and tools for integrating often non-commensurate factors into decision making, as well as information about broad contextual factors and how to best manage them, could all be usefully developed as training topics in their own right. Training in how to best access and integrate up-to-date information, how to find and manage advisors and contractors, and how to identify one's skills gaps and strategically manage one's own professional development needs could also be of use. In keeping with this, some producers nominated the generic topics of farm planning,

organisation/time management, risk management and people management as areas they want to improve in.

It is notable that the main felt learning needs nominated by producers – marketing, financial management and computers - are general business management skills rather than areas of technical production. Although the main decisions producers reported facing are to do with technical production, this did not translate into a strong desire to learn more about such topics. This discrepancy could reflect a number of things. It could reflect the outside expertise that producers are increasingly using to make decisions about the various technical production parts of their overall farming business. It could reflect different levels of scientific versus economics or business management knowledge within the producer population as a whole, given the historical dominance of agricultural science in agricultural education and extension and its continued prioritisation in research and development programmes. And it could reflect again the influence of the challenges – notably the economic challenges - that producers reported they are facing. For, given that business viability is determined in large part by its profitability, and such a measure is to a degree independent of climate or productivity, managing the impact of the economic context on one's overall business profitability is of ultimate concern to many producers. Thus, financial management is not only one of the main strengths producers listed, but one of their ongoing felt learning needs.

Related to producers' focus on their overall business profitability, it is important to note that the main felt learning needs are also non-commodity specific. Combined with comments by a number of interviewees that they often find training to be ill suited to mixed farmers, and the general lack of influence that enterprise type exerted on the research results, it seems that producers are after training that helps them manage the complex whole more than or as well as training that helps them with individual commodity-specific components. Although the research sample was chosen as a group of 'meat producers', the results suggest that most producers identify themselves as mixed farmers who produce meat among other products and while pursuing other goals. Their training requirements are consequently not contained to decontextualised, meat-specific topics.

5.1.7 The relationship between externally perceived needs and felt needs

The role that challenges in the operating environment play in shaping felt needs points to the overlap between felt needs and externally perceived needs. Rather than being developed in isolation from each other, each is shaped by similar outside forces. The differences between them arise when external observers like MLA and producers come up with different solutions to mutually recognised problems. For this reason, as implied above, an external observer like MLA is likely to engage a greater proportion of producers if it approaches the conversation between themselves and producers as one about problems and the range of solutions possible, rather than one about the particular solution MLA designs in response to that problem. Such an approach allows producers to then adapt the information to their particular circumstances, which is the second factor differing felt needs from externally perceived ones.

Externally perceived needs and felt needs are not only shaped by common outside forces but by each other. Information and training topics presented by groups like MLA form part of the external environment for producers that they shape their felt needs in response to. As discussed further below, how they interpret these aspects of their external environment depends in part on the social norms of their peers – those whom they identify with and respect the opinion of. In turn, communication between an external organisation and the producers active within it, as well as social research like this study, help shape the organisation's 'external' sense of what producers need to know. The point is that the more organizations like MLA create genuine opportunities for communication with producers, the more a shared sense of needs will arise out

of the discourse. Moreover, such efforts will build producers' trust in and respect for MLA, predisposing them more positively to training suggestions the organization has to make.

Problems arise when what predominantly shapes externally perceived needs is not aspects of the agricultural operating environment mutually recognised by an external organization and producers as areas of concern, and is not direct communication between the organization and producers, but is, rather, specific solutions that the organization has designed in a disconnected process. In organizations involved in R&D as well as extension, large scale problem definition is often used to set the research agenda in a strategic direction. With a focus on producing practical, tangible solutions, R&D is then undertaken to address the problems in a particular way. But such a process of problem definition – and the associated motivation of producers on issues - is often skipped for extension activities. Instead, extension is often positioned as a mere catch-all for R&D output. As a result, what producers are perceived to need to know can be heavily shaped by what an organisation perceives it is 'possible' for producers to know - which are the solutions-oriented outputs from its prior R&D activities. Combined with the lag time that necessarily exists between the identification of a problem and the production of specific R&D output on it, an externally perceived needs agenda can be implicitly or explicitly narrowed to R&D outputs. Combined with the tendency of RDE providers to assume that all externally perceived needs are *training* needs, the relevance and usefulness of training provision to producers can be poor. For, just as R&D is dynamic and responsive to current problems, so too should extension be 'demand led' and not 'supply led'; both in terms of addressing producers' felt needs, and in terms of addressing the current and future demands placed on them by the external environment.

5.1.8 Market segments and a new 'post-training world'?

From MLA's perspective, the above results suggest a typology of market segments for training provision. To begin with, it is apparent that simply targeting training at producers according to the particular enterprises they run is of limited value, given the lack of influence enterprise type seems to have had on the results and the preferences expressed above for help with more generic skill areas. State and education level, and age and farm size to a lesser degree, all seem to have some bearing on training preferences and the specific results above provide clues as to how best to provide for these segments.

Overall, though, the most pertinent division among producers is how they use training alongside other information sources and the related question of their general attitude to learning and training. Although necessarily a coarse simplification, the following three emergent segments can be identified:

- Pre-training
- Actively training
- Post-training.

The 'pre-training' group refers to those who are not currently and generally never have been actively engaged in training. In terms of Velicer et al.'s practice change model, they are 'Pre-contemplation': unmotivated to change (participate in training). This group bases it disengagement from training on a general sceptical attitude to training rather than specific characteristics or elements of it. Associated to a degree with a lack of experience in formal education, training represents a significant risk for these producers because it is generally an unknown for them and because it is likely to be more complicated than what they are comfortable with. Perhaps exacerbated by a lack of training opportunities in their area, and/or producers' lack of knowledge of what training is available, this group is 'pre-training' in the sense that they are

yet to fully try it, rather than in the sense that their 'progression' to training is inevitable. The present study suggests that this group can be found in Tasmania.

The 'actively training' group refers to the majority of producers, who are engaged in training to a greater or lesser degree. With moderate levels of education, they find most training adequately meets their felt learning needs. They determine their involvement on a case-by-case basis, assessing training opportunities according to their specific preferences for content and delivery features such as training provider, topic area, presenter, the timing of the event and opportunities to network with peers. They are often opportunistic in their training involvement, keeping an interested eye open for possible opportunities but not sufficiently interested or too busy to actively seek out such opportunities for themselves. To the extent that they do not tend to strategically plan their training involvement, they mirror the pre-training group. The present study suggests that this group can be found in NSW and Victoria and to an extent in WA.

The small but growing 'post-training' group refers to those who are well aware of what training has to offer and have decided on balance that generally it is an inefficient use of their time. Their typically high level of education means they are likely to find most training too simplistic for their own knowledge needs. Extremely busy and generally highly innovative, this group prefers to outsource knowledge or engage in more targeted, personalised learning opportunities. They rely heavily on a group of trusted advisors to whom they delegate virtually all complicated components of their often large businesses, placing themselves instead in an overseeing 'CEO' role where their main task is to integrate the diverse elements of the business and consider the strategic challenges posed by ongoing changes in the operating environment. Any training this group does is likely to be that aimed at 'the big picture'. When they are after specific technical details, they instead access these through their advisors or the information provided by the research and development organizations they tend to be confidently engaged with. The present study suggests that this group can be found in WA.

An important influence on the above is producers' expectations about what type of producers is going to attend a given training event. Underlining how training is a social activity that shapes and is shaped by producer's sense of self, the identity of one's co-participants at a training activity can rapidly verify or challenge one's decision to attend, above and beyond their satisfaction with the actual training involved. Given training's role as a route to self-improvement, and the importance we have seen producers' place on group discussion and interaction at training events, attendance at training is likely to have an aspirational quality, underpinned by the type of other producers who have chosen to also devote time and energy to it. Seen in comments about the value of being able to hear 'leading farmers'' perspectives, producers in the 'actively training' group are especially keen for the opportunity to rub shoulders with more 'advanced' producers. The different opinions that were found in this study as to whether producers prefer to train with like-minded or diverse groups may point to producers' simultaneous desire to easily identify with some co-participants as peers while also coming into contact with less familiar 'leading' types. The pre-training group may be an exception to this trend, as their concern with the identity of co-participants seems to stem more from a fear of standing out as a 'poor student' than from a desire to meet successful others.
Those in the post-training group are also likely to be an exception, as they channel their desire to network with particular others into targeted and deliberate opportunities rather than hoping *ad hoc* training events will provide such an experience.

The role training plays in producers' social identification emphasises the importance of a 'group' approach. In addition to accurately recognising and responding to the groups or market segments that are of most influence on producers' attitudes to training, training providers would do well to provide opportunities for discourse among members or would-be members of groups differentiated by their attitude to training and specific training needs. As well as facilitating learning between them, encouraging producers to consider themselves as part of a group with

regards to training would help to foster among them a shared sense of identity and associated shared attitude to training and shared training needs. Resultant social norms around training may lead in turn to a positive feedback loop between an individuals' and others' training behaviours, maximising the effect of any encouragement by an outside organisation. In other words, instead of trying to engage producers individually and individualistically, emphasising the particularity of producers' circumstances, training providers can seek to capitalise on the group character of training by making producers feel part of a group that shares a positive attitude to training to begin with. Such groups may consist of regionally specific examples of the segments above or even simply families.

Part 6: Conclusions

This study has achieved its aim of exploring the relationship between producers' felt needs, their perceived challenges, their perceived strengths (skill bases), their desire for training, their experiences of training, and externally perceived needs (in particular, training needs identified by MLA). It has also achieved its primary objective of answering the two research questions:

1. What do southern meat producers feel their training needs are?
2. How interested are they in the specified topics that MLA runs training in or is considering running training in? What would effective training on these topics look like?

Despite the hindering effects of drought and other issues, the strength and consistency of many of the overall results and differences between demographic segments give us confidence that the observations from this research are generalisable to the wider population of or demographic segments of southern meat producers. Thus, this study informs MLA's provision of training for such producers.

This study has also achieved its secondary objective of working with partner organizations and local interviewers in each of the regions, building local capacity, knowledge and networks. Feedback on the approach (as described in Section 3) indicates that the experience was a valuable one for the local interviewers involved, while the overall high quality of the data gathered suggests that it has allowed especially insightful information about producers' experiences of and attitudes to training to be gathered.

The outlook in five years for the meat industry is likely to involve:

- An increasingly challenging environment in which to do business.
- The complexity of decisions and uncertainty involved with decisions will increase.
- Therefore the tendency to delegate expertise is likely to accelerate.
- Training will face more competition in terms of producers' resources, and yet will also be more important than ever as they face unfamiliar situations and issues.

Therefore

- A continually higher need for increased access to skills.
- Training needs to be made relevant to mixed farmers by not being presented in a decontextualised commodity specific manner
- Given the pace of change the precise training needs of 5 years time cannot be determined now.
- But we can see that producers need to be trained now in the kind of issues they are going to increasingly face in 5 years time.

This approach can deliver benefits to industry as follows:

- Recognition of the role of training in knowledge development, learning and practice change under different contexts will enable a more targeted approach to training development and delivery which will lead to MLA investment having a greater impact.
- Understanding that only a small portion of producers attend training provides an imperative to deliver a more diverse portfolio of activities that align with producer felt need for knowledge and skill development, learning and practice change - therefore producers will be more motivated/inclined to build their skills and capability.

At one level, the answer to the questions above is that producers' expressed a desire for training in marketing, animal management and cropping (see Table 4 above) and have a moderate level of interest in the proposed topic areas.

Yet, more than providing lists of topics, statistics, or other details found in the summary section above, this research informs MLA's training provision at a strategic level. It takes MLA's existing interest in the concept of producers' felt needs and introduces the importance of distinguishing producers' felt training needs from their felt knowledge and learning needs, as well as from externally perceived versions of each.

It highlights and provides empirical evidence for the various ways that producers can and increasingly do fulfil their knowledge and learning needs independently of training. By placing training in broader perspective, this research allows us to question what role it is we are wanting and assuming training to play, and what role it actually does play for producers today.

We have seen that most producers perceive training to be important, have some experience of it, are satisfied with that experience and have used it to make an on-farm change. The findings support past research conclusions that producers not only view training as a route to information provision or skills development, but as a source of various other benefits (or at least experiences) derived from its group character. As found in numerous other studies, the value that most producers place on inter-personal interactions such as discussion with and observation of others leads to a preference for delivery methods that enhance this element of training.

Going beyond past research, however, this study also examines training's role as a source of information relative to other sources. In doing so, it reveals a previously under-acknowledged weakness of training. For, it seems that many producers' calculations of the costs and benefits involved in attending training may favour alternative modes of using and learning knowledge. When we consider producers' knowledge needs and learning needs, we see that only a small proportion actually translate into training intentions.

Although training offers significant learning advantages, such as the filtering of information and addressing various learning styles, the inflexibility of the commitment that it demands of producers combined with the uncertainty of any particular event's relevance to them means that it also carries significant costs and risks for them.

In producers' minds, training is in competition with their normal time commitments and modes of using and learning new knowledge. And in this competition it often fares poorly. For this reason, training needs to be understood not only as a *route to* practice change for producers, but *as* a practice change itself, with all of the attendant competitors, risks and decisions involved.

The upshot is that training needs to be justified or 'sold' to producers as much as any particular training topic or desired on-farm practice change. Addressing producers' felt training needs is not only a matter of identifying topics of interest. A need for training itself also needs to be created. At one level this means producers need to be aware of what training is available, and the deficiency found in this area points to a potential role for training brokers.

More specifically, the relative appeal of training needs to be enhanced by reducing the costs (such as time) and/or risks (such as uncertainty about the content) it poses to producers. In addition, one of the main problems producers reported with training is the difficulty of translating information into genuine learning and, when desired, into practice change. This problem especially arises when training is delivered in a one-off manner. Yet, training that incorporates a significant follow-up component may overcome this problem to a greater degree than alternative methods of learning, ultimately offering producers a more time efficient option and therefore enhancing the appeal of training for them.

While working to strengthen and promote the merits of training, it is essential that 'training providers' like MLA also loosen their focus on training and see themselves as knowledge providers who offer training as one of a suite of knowledge development options. It is increasingly unrealistic to expect training alone to be used by producers or to expect that it will lead to the often complex practice changes desired of them. Rather, the multi-faceted way in which producers source and use knowledge needs to be respected and accommodated.

Key to motivating producers to invest resources in sourcing information or learning about a new area is making clear to them *why* they need to know something. A contextual view of modern meat production highlights the exponentially growing number of topic areas of potential relevance to producers. This means that it is increasingly inappropriate to expect producers to have an expert level of knowledge on many, if any, topic areas. Combined with the different levels that different producers want training to be delivered at (discussed in terms of the market segments below), training providers like MLA need to look carefully at the depth as well as breadth of knowledge that they perceive producers to need.

As suggested by some producers, progressive training modules and/or other learning opportunities could be used to allow producers to systematically build their knowledge of an area.

All of these factors need to be kept in mind in addressing the different needs of the three market segments suggested above: pre-training, actively training and post-training producers. The 'pre-training' group represents a potential area for expansion for MLA. It in particular presents the need to motivate producers to consider and become actively involved in training: to promote the very idea of training as much as specific examples of it. Although, like those below, such producers need to be motivated to learn about particular topics, they also especially require a prior understanding of the relative advantages of using *training* as part of their knowledge and learning strategy.

The actively training group represents MLA's current target audience. This segment presents the need to deliver numerous training products that balance producers' need for time-efficiency with an opportunity to engage with others. The key is to provide training opportunities in the identified felt learning needs in such a manner as to convince potential participants to select training over or in addition to other information sources. Recognising the opportunistic way in which many of these producers tap into training opportunities, MLA could help them to develop a more strategic approach to professional development by providing tools for them to identify their knowledge gaps and options for addressing them. These options could include training activities integrated into a coherent system to optimise synergies between topic areas and to allow producers to progress through events in sequence, reducing the one-off and *ad hoc* feel of many training events.

Finally, the 'post-training' segment presents a number of challenges and opportunities for MLA. First of all, given the overlap between this group and large producers, it provides insights for MLA's large producer strategy. Like the 'pre-training' group, it represents a potential area for MLA to expand its training and knowledge and learning provision into. This group could be better catered for by the provision of: elite, focused and small group training in CEO-type skills and the rapidly changing industry environment; more personalised professional development opportunities such as coaching and mentoring, perhaps from outside the industry; the upskilling of the kind of advisors this group increasingly uses to support their decision making; and efficient packaging and delivery of key information areas. The first of these suggestions represents a way for MLA to take the threat represented by a potentially emerging "post-training world" and turn it into an opportunity to redesign its knowledge provision to meet the modern needs of producers.

In particular, the organization is uniquely positioned to provide high level information about industry trends.

All market segments will be more interested in training if the topic area coincides with their felt training needs. Research into such needs, such as this study, is therefore of ongoing importance. Furthermore, given the small proportion of the numerous topics incorporated within producers' challenges, plans and decisions that are translated into felt training needs, and given how producers' felt training needs are constructed in part by the same sector-wide forces that external observers like MLA perceive, MLA would do well to broaden their communication with producers to knowledge needs in general. A conversation is needed between producers and MLA about how producers can best be served by the expertise MLA has to offer and how the two groups can work together to tackle the increasingly complex reality of being an agricultural producer. Rather than holding this conversation around the training options MLA has available or the results of its specific R&D projects, this conversation needs to precede the development and even assumption of training products. At a time when the meat industry is reviewing its investment in training and other areas, and at a time when many producers are facing serious questions about the future, it is pertinent to go back to basics and consider how producers' escalating professional development needs can best be met.

For training providers like MLA, it is both a threat and opportunity. It is a threat because of its negative effect on the wellbeing and productivity of producers, and on their and MLA's ability to invest in activities such as training. It is an opportunity because the serious questions that it is raising for producers is a potential impetus for them to seek out new expertise, learning and even training to support their decision-making.

Furthermore, the increasing tendency among producers to outsource knowledge and delegate decisions that this research suggests, signals a need for leadership and direction from the likes of MLA. While producers may be increasingly aware of their own deficiencies in the face of enormous challenges such as changing climate and market conditions, they are not necessarily aware of what their knowledge and learning strategy ought to be in response.

MLA has an important role to play in mapping out the big picture for producers and working with them to co-determine not only what knowledge they need to best support their decision making in such a context, but how they can most strategically access that knowledge. By taking an innovative, participatory and big picture approach to its own work, MLA can help producers to adopt a similar strategy in relation to their businesses and growing knowledge needs.

Part 7: Recommendations

A consideration of the results, discussion and conclusions in this report could lead to many forms of recommendations influenced by the background of the reader. It is important therefore that MLA study this report carefully and debate the issues it raises. The following recommendations assume resources are limited and MLA must make some difficult strategic decisions for future investment.

1. Specialist knowledge vs management skill

MLA must firstly be clear about its obligation to 'wholesale' specialist knowledge on the meat industry vs responding to producers felt need for management training.
Delivery of specialist knowledge is an area of clear market failure and MLA is the research organisation with the intellectual capital to deliver.

More generalised knowledge can be delivered by a wide range of deliver and the market failure is doubtful.

Therefore MLA, should become more focused on exposing industry to the technologies which they have invested in through field days, advisor updates and newsletters.

2. High quality service to the large specialised producers

A strategy to understand the felt needs of and deliver to large specialised meat producers, is essential to deliver maximum value to meat producers. This is best done through creating an elite network or working with existing networks. The network is only needed to aggregate demand and therefore address market failure.

3. Market intelligence across a broader network

A low cost network of 'brokers' is required to provide regular monitoring of felt need, create awareness of opportunities and aggregate demand across the industry is required. This network would use existing positions in a range of community roles. For example, community houses, rural councillors, local government may supplement their income through providing the role.

4. Advisor Networks

A renewed effort to work with advisors and develop the network of advisors, in the public and private sectors is required to enable retailing of knowledge and deliver in line with producer's needs. Cooperation with GRDC and AWI is important as advisors are increasingly seeing themselves in broader roles.

5. Delivery of training in response to aggregated demand

Given all of the previous four strategies, then training can be delivered in response to felt needs through a range of providers. This study indicates the cost of training is not of concern to farmers as long as it is delivered well and is seen as important for the business. Therefore MLA must only bring the people together and ensure the deliverers are available.

The above five strategies are complementary and dependent on each other. They are based on the findings in this report and the following principles:

- MLA must focus on its area of strength
- The market must be segmented
- There is an obligation to create awareness
- Farmers see training as important but will be selective
- Networks are required to aggregate demand

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9 Appendices

9.1 Appendix 1 – Literature Review

9.1.1 Review of Past Research

9.1.1.1 Introduction

All studies are informed by the concepts, strategies and methodologies of the research that has gone before them. To have a clear understanding of the strengths and weaknesses of the paradigm in which we are working and to which we are contributing with this study, it is important to briefly review the main approaches and ideas of the most relevant past research. This section sketches the shape of past research on factors that affect producer participation in agricultural extension, focusing on the question of which producers participate in training and what preferences they have for training content and delivery. In doing so it highlights some of the variables that need to be considered in a study such as this.

First, it is important to note that the vast majority of research on extension is motivated by the belief that extension is a good thing and producers need to be encouraged to learn in order to improve their practices, their businesses and their sector. Traditionally, this research has focused on how to most effectively 'transfer' or 'deliver' scientific or expert information to producers (Hartley & Hayman 1992; Kilpatrick 1996; SELN 2006, Black 2000). In this work, extension is conceptualised as the end point of a linear research-development-extension process leading logically to producers' adopting the improved knowledge or technology being extended to them. Training is viewed as a means to the end of desired practice change.

In light of current theories about teaching and adult learning, approaches to training have shifted more recently from methods of technology transfer of expert knowledge towards participation and learner-centred methods of community engagement and 'enabling' change (Pretty 1995; Roberts 2000; Francis & Carter 2001; Kilpatrick 2003; SELN 2006; King 2003). Involving some redistribution of power over the learning process from experts to producers, this shift has been undertaken for instrumental and idealistic reasons. It is related to a reconceptualisation of extension as an important component of the broader concept of individual and community capacity building (Macadam *et al.* 2004; Coutts *et al.* 2005). Although the way in which training is used to achieve practice change and often the identity of the desired practice change are altered in this more participatory model, training continues to be seen predominantly as a means to the end of on-farm practice change as opposed to an example of practice change itself.

Research on producers and training is set to remain an important resource for the industry for a number of reasons. First, evaluations are being increasingly used to assess the effectiveness of training-based practice change programs in achieving their desired on-ground outcomes, spurred on in part by ongoing difficulties in encouraging producers to participate in training and subsequently adopt the knowledge learnt, and by the growing emphasis on accountability and return on investment. Second, training is also being increasingly situated within alternative approaches to achieving practice change, such as the use of regulation or markets. The lightly regulated and highly fragmented character of agricultural practice relative to other industries, however, means that voluntary approaches – namely extension – remain the primary way of achieving change in the sector.

Third, research into the various factors influencing producers' willingness to voluntarily adopt new practices has been reinvigorated by the suite of best management practices for producers that have arisen in the natural resource management field, adding to the collection of practice changes being desired of producers (Vanclay 1992 & 2004; Cary *et al.* 2002; Brodt *et al.* 2004; Pannell *et al.* 2006; Llewellyn 2007).

The above overview points to the two central questions and their sub-questions that have guided social research on producers and training:

1. What influences whether producers participate in training or not?
    a. What producer characteristics are important?
    b. What training characteristics are important?
2. If producers participate in training, what influences whether they put their learning into practice?

It is the first of these questions that is the crux of the present study. This focus allows us to study training away from any particular agenda for on-farm practice change. As a result, we are able to view training as a practice in its own right instead of a mere means to the end of an on-farm practice change.

Previous research on each of the sub-questions above is now briefly reviewed.

9.1.1.2 Producer characteristics influencing participation in training

According to Agricultural Financial Survey data, eighty percent of Australian farm businesses participate in training. Yet, for many producers, training consists only of field days, and only three percent attend courses of several sessions (Kilpatrick 2000, 110).

What affects the popularity and effectiveness of training programs? Various producer typologies have been used to try to understand the variation in training participation that exists among the farming population, avoiding a blanket approach to producers and highlighting potential market segments for training providers (Emtage *et al.* 2006, 79). Table 6 provides a summary of the most relevant typologies used in the literature. Each of these is briefly discussed below, followed by some insights from the behavioural change literature. Attention is then turned to the content and delivery of training.

Table 6 A classification of producer typologies used in relation to agricultural extension (adapted from Emtage et al. 2006)

Basis of typology	Criteria used	Example authors
Demographics	Age, gender, previous training/ education, location	Aslin *et al.* 2006; Kilpatrick 2000; Kilpatrick & Johns 1999
Farming scale and enterprise mix	Scale of operation, enterprise mix	Hollier *et al*. 2003, Kilpatrick 1996
Farming style	Adoption of innovations	Rogers 1995; Moore 2002
Attitudinal	Attitude to learning; attitude to training	Kilpatrick 1997; Kilpatrick & Rosenblatt 1998
Learning style	Preferred way of learning	Trede et al. 2000; Fleming 2005

9.1.1.3 Demographics

Previous research has uncovered correlations between training participation rates and some demographic factors. In Australia, the following factors have been noted in research by Aslin *et al.* (2006), Kilpatrick & Johns (1999), Kilpatrick (1999), Kilpatrick (1997) and others as being at least weakly associated with higher participation rates in training:

- younger age;
- male gender;
- higher level of formal education;
- previous participation in training; and
- state of Australia.

Age is correlated with level of education; older producers tend to have lower levels of education than younger producers. Research has highlighted the relatively low levels of education within the Australian farming community. It has been estimated that only 25% of producers are secondary school graduates. A large proportion of producers scored poorly in the first national survey of adult literacy (Hartley and Hayman 1992).

The gendered division of labour on farms underpins some of the differences in training participation between men and women. Lingham Foods (2007) found that among grain producer's women were more interested in business management training and men were more interested in production skills training.

In terms of state, although Kilpatrick (1996) found no significant difference in the percentage of farm businesses participating in training between different states, Aslin *et al.* (2006) found varying levels of participation in different states across a number of surveys (Table 7) (note no data on NSW or Victoria was presented). Most strikingly, Tasmania was found to have low participation levels. Differences between states may reflect the differences between the agricultural sectors clustered in them and the availability of opportunities (Aslin *et al.* 2006).

Table 7 Relative average participation rates in capacity building activities across Australian states and territories (from Aslin et al. 2006: 56)

	SA	NT	QLD	NSW	VIC	WA	TAS
Rural Producer Surveys (2000, 2002)	High	High	High				
ABS Agricultural Survey	High					High	Low
ABARE Small Farms Survey	High						Low

9.1.1.3.1 Farming scale and enterprise mix

Studies have uncovered differences in participation rates between agricultural industries. In Kilpatrick's (1996) study, grain farm businesses were more likely to have had someone attend at least one training event (88%) than the average for all industries (80%). Beef farm businesses, on the other hand, were less likely to have had someone attend at least one event (70%). In Aslin *et al.* (2005), participation was lowest in traditional broad-acre livestock industries and highest in intensive industry sectors such as grape growing and cotton.

The scale and enterprise mix of farms vary not only with industry but with types of producers. For example, there is a growing population of hobby or lifestyle producers who have very

different training interests and needs to those for whom the farm is the major, or only, source of income (Hollier *et al.* 2003). As training aimed at increasing productivity and profitability is unlikely to appeal strongly to this producer group, they can be expected to have low participation rates in such activities. Anecdotal evidence suggests that a general lack of awareness of environmental management issues among this group also means they have a low level of interest in natural resource management oriented training opportunities. Overall, their lack of professional identity as producers may mean they do not relate to the need for 'professional development' in any farming related topics.

Larger farms are associated with participation in training by the assumed positive relationship between large farms and farming success, farming success and innovation, and innovativeness and training. We now look in more detail at the last of these associations.

9.1.1.3.2 Farming style

Much research has been based on the idea that producers can be grouped according to their 'style' of farming. Of most relevance to training is work that has sought to classify producers into levels of innovativeness. While it is important to note that innovativeness is not a personal characteristic that people apply equally to every decision (Pannell *et al.* 2006), attitude to change, risk and novelty does appear to be a factor in how producers identify themselves and relate to others. All of us are influenced by those we identify with most strongly. It is thus logical that people are most likely to participate in training or adopt a new innovation when their friends and neighbours are also involved (Murray-Prior *et al.* 2006).

Agricultural extension has been strongly influenced by Everett Roger's (1993) famous classification of people into levels of innovativeness (Figure 9). According to Roger, new ideas and technologies trickle down through cultures from the few 'innovators' to the small number of 'early adopters', then to the larger number of secondary adopters or the 'early majority', through to the 'late majority' and 'laggards'. Research suggests that the risk attitude of those in "lower" levels means that they are unlikely to respond to innovations until those in the level "above" them have adopted.

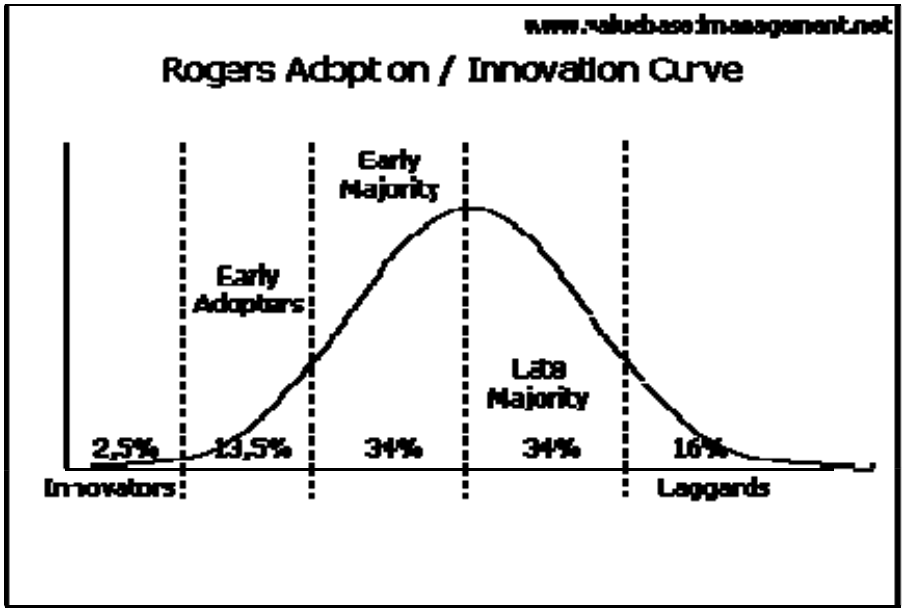


Figure 9 Rogers' innovation curve (http//:www.valuebasedmanagement.net)

As a result of Roger's model, agricultural extension has conventionally focused on those producers believed to be the 'early adopters'. Yet, this model has been since subject to various critiques. Moore (2002) argues that diffusion doesn't work smoothly because there is a 'chasm' – differences in values and expectations – between the early adopters and the early majority, such that adoption among the former will not lead to adoption among the latter. Moore asserts that early adopters or 'visionaries' may alienate the early majority or 'pragmatists', putting them off rather than leading them to the new innovation in question. More fundamentally, Black (2000) argues that the diffusion model can reinforce existing social inequalities, privileging those who are already advantaged and neglecting the more difficult task of helping those who need it most.

9.1.1.3.3 Attitudes to training and learning

Some producers are attitudinally inclined against training. Some lack confidence as learners, fear educational institutions or perceive training as irrelevant to their needs, for example (Kilpatrick 1997). Contributing to a negative perception of training may also be the 'social distance' between producers and extension agents that Fulton (2003) notes is a disincentive for some producers. The result of these factors is that, as Kilpatrick and Rosenblatt (1998) assert, while seeking information is acceptable behaviour in the Australian farming community, training is far less so.

Attitudes to training have been found to have a strong positive correlation with prior experience of formal education (Aslin *et al.* 2006; Kilpatrick 1996). Kilpatrick (2000) found almost a third (31%) of farm businesses in the lowest education category (correlated with those who had been in farming the longest) had attended no training events and did not intend to participate in any training events in the following three years, compared to less than ten percent of farm businesses with higher education. Kilpatrick (1999) found that those with negative past experiences of education lacked confidence in formal training situations.

A positive correlation has also been identified between levels of past training and interest in further training. In a survey of FarmBis participants, more than half the respondents (53%) stated that participation in previous courses had increased their interest in undertaking further training (Aslin *et al.* 2006, 38). Kilpatrick (1996) also observes a strong correlation between recent training participation and past training participation.

9.1.1.3.4 Learning styles

Researchers have also sought to categorise producers according to their preferred learning style (Learnativity 2002). Among the many models of learning styles available, the VARK model (Fleming 2005) is most well known. It assesses people's preferences for one or more of the following styles:

- Visual - those who prefer pictures and diagrams;
- Auditory – those who prefer to listen to spoken information;
- Reading – those who prefer written text, including bullet points and lists;
- Kinaesthetic – those who prefer hands-on experience.

Applying this model to NZ dairy producers, McLeod (2006) found that producers and their partners had strong preferences for Kinaesthetic- and Reading-based learning.

Another popular model of learning styles is that based on Kolb's (1984) experiential learning theory. Kolb asserted that learning consists of a flexible cycle of four learning modes:

- Concrete Experience (CE) (trusting feelings and hunches);
- Reflective Observation (RO) (listening and watching);
- Abstract Conceptualisation (AC) (using reason and logic); and
- Active Experimentation (AE) (learning by doing).

Based on the importance people place on each of these stages and the order in which they like to use them, Kolb developed four main learning styles. Along with their preferred learning modes, these styles are:

- Assimilators – those interested in abstract ideas and concepts and who are best at inductive reasoning (AC and RO);
- Convergers – those focused on problem solving and finding solutions to questions (AC and AE);
- Divergers – those who prefer to observe rather than take action (RO and CE); and
- Accomodators – those who prefer hands-on experience and rely on instinct and other people for information (AE and CE).

In a study of Iowa producers, Trede et al. (2000) found that although the producers preferred the Assimilator learning style overall, for agricultural topics the preferred learning mode was Active Experimentation. This highlights an important potential difference in learning preferences for different topics. The preference Trede et al. found for Active Experimentation on agricultural topics is in keeping with the producer preference for Kinaesthetic learning discussed above.

9.1.3.3.5 Insights from the behavioural change literature

Behavioural change theorists seek to understand behavioural change - or what is known in the agricultural arena as practice change - in terms of psychological and social processes. The topic is of relevance to agricultural training not only because training is usually utilised within the sector as a tool to achieve practice change among producers, but because participating in training is itself a form of practice – and often practice *change* – for producers. It is important to keep this point in mind: that training can be viewed not only as a tool *for* practice change but *as* practice change itself. In contrast to most research into training and practice change, it is particularly in the context of the latter view that the following is of interest to this report.

Behavioural change theorists usefully view practice change as an active process that requires a degree of effort. This effort may include thinking about what we normally do out of habit in order to do something differently. Psychological research on changing habits highlights the need to ‘unfreeze’ the subconscious actions we perform out of habit. That is, we must become aware of the status quo before we can change it. Research shows that the likelihood that we will learn to think consciously about a behaviour and change our habits is enhanced when: what we are trying to do is complex; we care about the consequences of our action/decision; and we have enough cognitive capacity, knowledge and time to do so (Dawnay and Shah 2005). The importance of these factors underlines the need for social research to understand our audience’s attitudes, prior knowledge and circumstances.

Because new habits generally take quite a long time to form, practice change is an ongoing process, not an event (as it is often assumed to be). A desired *practice* also generally involves a degree of repetition.

To change that practice, therefore, requires that "the change" must be repeated. Minimising the time delay between when someone acts and when they receive evidence of its consequences is important in this regard (Jackson 2005).

Numerous behavioural change theorists have attempted to classify it into various types and stages. In the fields of addictive behaviours and cancer prevention, Velicer *et al.* (1998) emphasise this temporal dimension of change in their useful model of the five stages of practice change that individuals move through:

1. *Precontemplation*
   The stage in which people are not intending on changing in the foreseeable future (defined as the next 6 months).

2. *Contemplation*
   More aware of the pros and cons of the change for them, people at this stage intend to change in the next 6 months. Their ambivalence between the trade offs involved means they are not ready to change more rapidly. People can become stuck at this stage for long periods ('chronic contemplation' or 'behavioural procrastination').

3. *Preparation*
   At this stage, people have a plan of action and the intention to change in the immediate future (the next month).

4. *Action*
   This is the period during which people actively work to make the specific, overt, desired modifications to their behaviour.

5. *Maintenance*
   People enter this stage when they have to less actively put the behaviour in place as they become more confident and less likely to relapse (ie. the new behaviour becomes habit).

Many discussions of behaviour change limit themselves to the Action stage, ignoring not only the important preceding stages, but the critical Maintenance one. 'Action' is also not an all or nothing affair (which Velicer *et al.* do not sufficiently illustrate in their model). There are degrees of practice, as intensity and frequency, for example, vary. An individual may implement a new practice sporadically and poorly at first, for example, but then start to perform it more regularly and more comprehensively. Social and personality psychology point to how humans often make decisions and changes to their behaviour using a process of 'incremental commitment' (eg. Kurzban 2001), which is a rational process of enquiry and testing.

Nevertheless, if an over-emphasis is placed on the 'Action' stage of practice change, significant incremental increases in commitment can be overlooked.

Velicer *et al*. assert that most practice change programs in the health field are action-oriented. Such programs are best directed at people in the Preparation stage: those who have made the decision to take action and are receptive to help (including motivation) to do so. But this leaves a large number of stages/people that are better suited to other approaches. These alternative approaches emphasise not the ultimate action that is desired, but rather, for example, getting people to think about the pros and cons of such action relative to their current practice. Rather than dismissing people in the Precontemplation stage as uninformed, demotivated or resistant for their lack of engagement with an action oriented program of change (a possible consequence of social research into the group's

attitudes), the different needs and practice change potential of this group need to be recognised.
As discussed further in the report, this has consequences for how training *for* practice change and training *as* practice change are presented to different target audiences or market segments.

9.1.1.4 Training characteristics influencing participation in training

9.1.1.4.1 Training content

Many if not all of the above influences are dependent on what sort of training is being proposed. Key to this is the content of the training, which has been found to influence, for example, differences between men's and women's participation rates.

Relevance is the key word when it comes to preferred training content (Andrew *et al.* 2005; Fulton *et al.* 2003). Kilpatrick (2003) assets that adults learn in response to a problem, opportunity or event in their lives, which is supported by the finding in the BCG (2007) report discussed above that some producers have become more interested in certain topics as a result of the drought. Key to relevance in this context is not only how well-timed information is (Vanclay 1992), but how tailored information is to producers' specific farm business, as sifting through knowledge and skills takes time (Kilpatrick & Rosenblatt 1998). Localised information is highly valued as it is seen to already be adapted to the local farming environment (Llewellyn 2007). Associated with this, agriculturally specific rather than generic skills seem to be preferred (Roberts 2000), as is training in which the direct on-farm benefits are evident (Andrew *et al.* 2005). Roberts (2000) also found, however, that the development of an understanding of key principles was a common factor in the success of training programs.

Other important characteristics of desirable training content are easy access, high quality and reliability (Llewellyn 2007). Access refers to how easily producers can relate to information and concepts being presented, which is heavily dependent on the quality of delivery. The amount of information presented in training sessions can be overwhelming and producers have a preference for only receiving manageable chunks of information at any one time (Kilpatrick 1997).

Related to accessibility and quality is the issue of language. Given the poor literacy skills of many producers (mentioned above), it has been recommended that extension material be written and delivered in plain English; an approach that was overwhelmingly endorsed by producers (Hartley and Hayman 1992). Training can also be made more 'accessible' if it is packaged as 'delivering information' rather than 'training' or 'learning', given the suspicion of formal education that exists among some producers (discussed above) (Kilpatrick & Rosenblatt 1998).

While producers' needs in terms of specific or technical information are constantly changing, general trends have been observed in the desire for certain topics or categories of information. Kilpatrick (1996) found that producers are less likely to train, or plan to train, in marketing, land management and risk management compared to agricultural and technical skills because the former are complex processes, involve abstract concepts and seem to have fewer direct or immediate returns. A survey of FarmBis participants corroborates producers' relative lack of interest in marketing and land management (Aslin *et al.* 2006). It also found that general business management had a particularly high participation rate, reflecting the high participation rate in Quality Assurance courses, which, in turn, reflects QA's status as a "non-negotiable" topic underpinned by regulation. In a survey of the training

priorities of grain producers, Lingham Foods (2007) found a preference for management skills specific to crop production, such as grain marketing and plant nutrition. They also highlighted a desire for training in business skills, marketing, GPS technology and computer skills. The latter was also mentioned as a barrier to training for some respondents.

9.1.1.4.2 Training Delivery

Besides the content of training, aspects of its delivery are crucial determinants of its popularity and success. Key among these determinants is the credibility of the trainer. Numerous studies have found that lack of confidence in training providers is a common inhibitor of participation in training (Kilpatrick & Rosenblatt 1998; Lingham Foods 2007; Fulton *et al.* 2003). Producers tend to lack confidence in those outside their realm of practice (Kilpatrick & Rosenblatt 1998, 45). That is, many prefer to seek information from those who they perceive to share their experience and values, such as those who are experienced in providing on-farm advice or have ties to the community, particularly personal relationships and empathy with producers (Pannell et al 2006, Boyd 2003, Gibb 1997, Vanclay 2004). Trust between the extension agent and training participants is essential to success (Boyd 2003; Francis 2001). Producers also want trainers to be knowledgeable, with authority or technical expertise, and to have strong communication skills and an accessible style (Boyd 2003, Pannell et al 2006).

Trainers' lack of credibility is often linked to their failure to recognise and respect producers' already significant amount of knowledge (Kilpatrick & Rosenblatt 1998). The ineffectiveness of much top-down expert-producer training provision has been a central motivation for the turn to more learner-centred extension mentioned above. This shift represents a move from a conventional education model of agricultural extension to one based on adult learning principles, which hold that:

- learners are voluntary, independent, active and self-directed participants in the learning process;
- teacher and learners are mutually responsible for the learning process;
- the teacher acts as a resource and facilitator;
- peer-to-peer learning is a crucial component of the learning experience;
- learning is best based on the real needs and experiences of participants; and
- learning goals should be shared and explicit (Burns 1995, Francis 2001, Kilpatrick and Rosenblatt 1998, Kilpatrick 2003).

In support of producers' preference for training designed and delivered along adult learning lines rather than conventional education lines is their preference for training delivered in an informal rather than formal setting and delivery methods that facilitate peer interaction (Kilpatrick 1997; Francis 2001; Thompson *et al.* 1999). Like all professionals, producers like and need to network, and training can provide a previous opportunity to do so.

In one study, while a member of 76% of farm businesses had attended a field day and 38% had attended a workshop or seminar in a year, only 3% had participated in formal education (Kilpatrick & Rosenblatt 1998, 40).

Interaction between teacher and learner is also important. In Riesenberg's (1989) study the two methods requiring the most interaction between the sender and receiver of information – on farm demonstrations and tours/ fields trips – were the most preferred, while the two methods requiring the least interaction – home study and computer-assisted instruction – were the least preferred. The popularity of interactive training activities may also be related

to the opportunity for practical, hands-on learning (Kilpatrick 1997); an aspect that has generally been well received by producers, given their learning preferences discussed above.

The lack of face-to-face interaction possible through computer-assisted instruction is one of its main drawbacks. Information reliability, information overload, the state of telecommunications infrastructure in some parts of rural Australia, and the lack of a reasonable up-to-date computer in some farm households, are other major constraints. Black (2000) found that a substantial proportion of producers do not intend to even get an internet connection. Yet, the use of information technologies also has significant advantages for agricultural training. In an industry in which geographical fragmentation is a serious challenge, the internet has made much information more accessible. Interaction between producers who share common interests rather than location is also being increasingly enabled through email, electronic bulletin boards and chat rooms.

Overall, there are numerous factors shaping the precise delivery methods that producers prefer. Some of the specific methods prioritised by various studies are listed in Table 8 below.

Table 8 Preferred delivery methods for training found in example studies

Preferred delivery method	Reference
Workshops, short courses, seminars	Lingham Foods (2007)
Workshops, short courses, fields days, demonstration sites	Aslin *et al.* (2006)
Workshops, seminars, field days	Kilpatrick & Rosenblatt (1998)
Workshops, practical short courses, field trips, on-farm demonstrations, group discussion	Riesenberg (1989)

In addition to the preferred mode of delivery, other characteristics of delivery have been found to be of importance to producers. First, the location of training can be a barrier to participation as distance increases both the time commitment and cost of training for producers (Lingham Foods 2007). As well as reducing the amount of time and money required to participate, local training has the added advantages of increasing the likelihood of relevant content and more socially satisfying training, as well as promoting local networks (Lingham Foods 2007, 85).

Second, the timing of training is important. Lack of time and the time of year or day that training is offered have been found to be among the highest barriers to participation (Lingham Foods 2007). Conversely, timing training to fit with producers' timetable has been identified as a universal success factor in-group learning (Roberts 2000, Aslin *et al.* 2006, Andrew *et al.* 2005, Kilpatrick & Johns 1999).

Third, as implied above, cost is a serious consideration for many producers. Aslin *et al.* (2006) found that producers prefer courses that are free of charge or relatively inexpensive. The cost of training includes the indirect costs of travel, accommodation, income forgone, and any childcare or alternative farm labour required. Nevertheless, many people are willing to pay for training if they consider it to be highly valuable (Kilpatrick 1997).

9.2 Appendix 2: Methodology

9.2.1 Sampling-related error

9.2.1.1 Non-responses

The high level of non-responses was caused in part by the outdated contact details or farming/meat producing status of those on the MLA membership list. Difficulty contacting others on the list was potentially exacerbated by the drought conditions that characterised all of the regions during the study period. Potential interviewees were phoned three times before they were eliminated from the list.

9.2.1.2 Refusals

A high level of refusals among potential interviewees was also experienced and was also caused by timing issues. First of all, drought was again implicated, with interviewers in all states reporting drought as a major reason producers were choosing not to or were unable to participate. Secondly, the process of and delays in generating additional MLA member lists meant that the eventual timing of many interviews coincided with crop harvests, which further reduced the ability and willingness of many producers to be involved.

Besides reducing the sample size, the high level of refusals creates a bias in the data. All of the producer characteristics discussed in Section 1.4.2 above relate to producers' interest in participating in *research about training* as well as in participating in training itself. Thus, just as there seem to be explanatory factors behind which producers participate in training, there may be explanatory factors behind which producers participate in research about training, potentially biasing the subsequent research. Although it is difficult to know what the relationship between the two groups of explanatory factors is, it is likely that there is a positive correlation between producers' level of interest in the two topic areas. That is, a person's disinterest or inactivity in training is likely to decrease their willingness to talk about the topic with an interviewer for an hour. Although interviewers emphasised to potential interviewees that we were interested in their perspective on training regardless of how knowledgeable of, active in or positive about the area they felt they were, those with the lowest levels of knowledge of, experience in or positivity about training may have self-selected out of the sample. The implication is that those we spoke to may represent a higher level of positive engagement with the topic of training than the general farming population.

9.2.1.3 Participant profile

In total 297 producers were surveyed in NSW (27%), Victoria (22%), Western Australia (20%) and Tasmania (31%). Overall, 73% of the sample was males and 27% were females. The gender split did not differ markedly across the states.

The following charts present some key demographic variables by state. Further information, including sample sizes, is available in Appendix 2.
In terms of age, producers ranged in age from under 30 years of age to over 60 years, but were predominantly aged between 45 and 59 years (42%), with an average age of 51.6 years (Figure 10). Victoria had a generally older population than average, with 46% over 45, and NSW had a generally younger population than average, with 39% under 44.

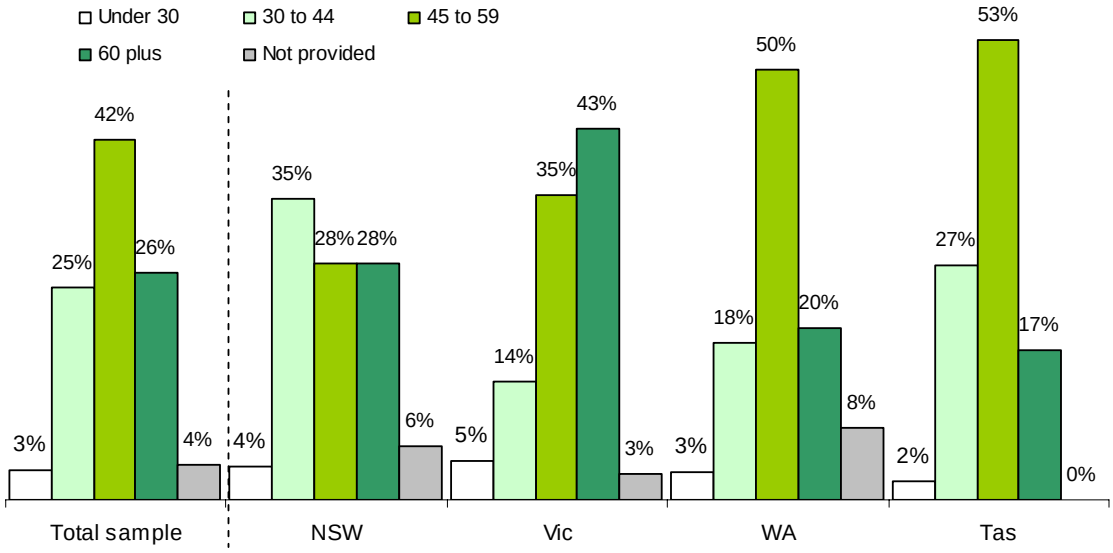


Figure 10 Age distribution of sample by state

In terms of formal education, the largest proportion of producers had Year 11 or Year 12 education (37%), followed by 25% who had TAFE or equivalent qualification and 22% who had a university degree or postgraduate qualification (2% - or 5 individuals - were postgraduate trained). Only 14% had Year 10 or less.

There were some notable differences between states (Figure 11). In particular, Victorian producers generally had lower levels of education, with 67% having no post-school or TAFE level education, and NSW producers generally had relatively high levels of education, with 34% having a university qualification or postgraduate degree.

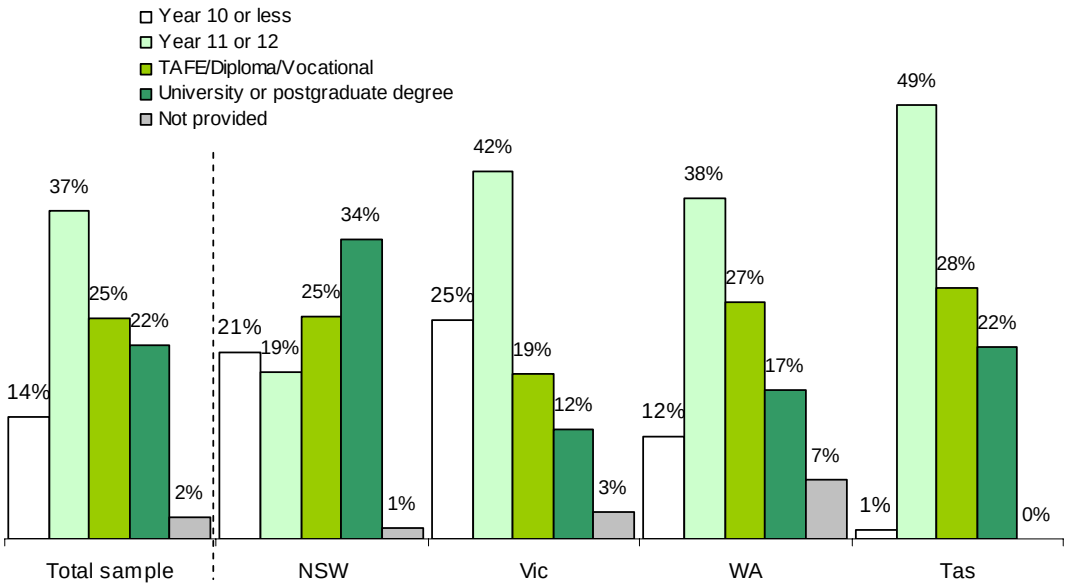


Figure 11 Education attainment of sample by state

Younger producers were much more likely to have a university qualification compared to older producers: 35% of producers aged under 45 had a university degree compared to only

17% of producers aged 45 and over. This correlation between age and education level is evident in the differences between the Victorian and NSW samples.

In terms of enterprise type, most frequent was lamb (76%), followed by grain (71%). While most producers (93%) had more than one type of enterprise, the most common enterprises by state were lamb and wool in NSW, lamb and grain in Victoria (where each was more common than in the other states), wool and grain in WA, and cattle and 'other' (predominantly potatoes) in Tasmania (Figure 12).

Overall, the most frequently mentioned combinations were:

- Lamb, wool and grain (17%);
- Lamb, wool, cattle and grain (15%);
- Lamb, wool, cattle, grain and other farming activities (11%);
- Lamb and grain (8%);
- Cattle and other farming activities (5%);
- Lamb, cattle and other farming activities (5%); and
- Lamb, wool and cattle (5%).

Of the 7% who were single enterprise 5% were cattle only producers, 1% had lamb only producers, and 1% was wool only producers.

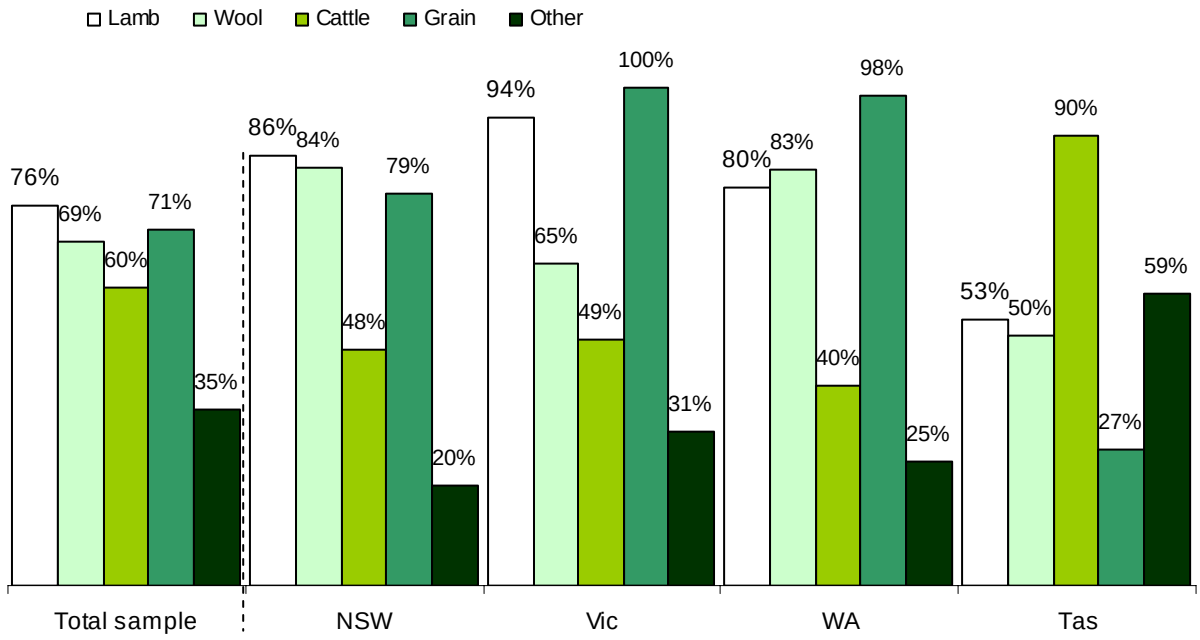


Figure 12 Farm enterprise type of sample by state

A wide range of farm sizes were represented in the sample, with 14% of producers having under 200 hectares and 23% having more than 2,500 hectares. As expected, the largest proportion of large farms was in Western Australia (45% were larger than 2,500 hectares) and the largest proportion of small farms was in Tasmania (39% were under 200ha) (Figure 13).

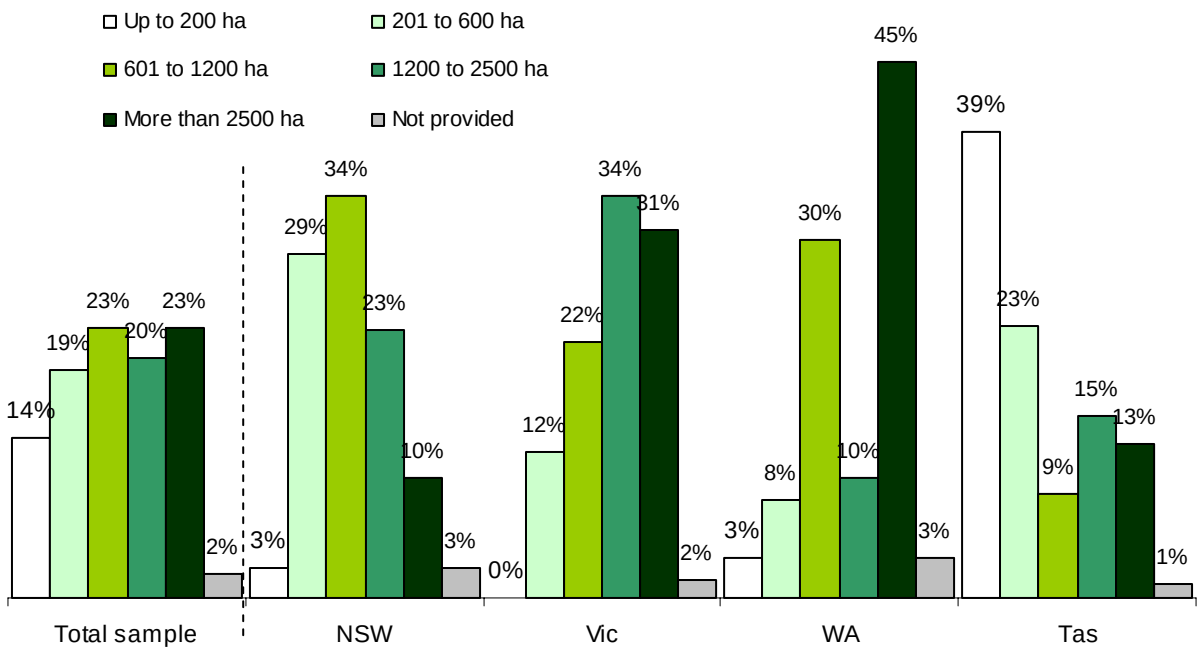


Figure 13 Farm size of sample by state

Finally, when asked to describe their farm, producers' responses tended to describe their farm in one of four main ways:

- Intensive;
- Extensive;
- Average; or
- Difficult.

To provide more of a sense of the diversity of farm types, some of the verbatim responses are provided below. First, those who described their farm as intensive made comments such as:

Fertile, profitable, intensive

110 Ha of fertile soils, progressive farm, God's country

Maximise return with a lot of inputs

Small intensive farm with good equity levels

Intensive lambs from merino ewes.

Those who described their farm as extensive made comments such as:

> *Beautiful environment, virgin bush, was run down - trying to improve, philosophy of sustainability and organic*
>
> *Low input, bio-organic, lambs keep the place going*
>
> *Extensive grazing with significant areas of native vegetation*

Those who described their farm as average made comments such as:

> *Run-of-the-mill commodity producer, dual purpose flock based on merino*
>
> *Broad acre, dryland, self-replacing merinos and cattle*
>
> *Family farm, mixed livestock and cropping, average size for area*
>
> *Traditional grazing property. Very dry!*

And those who described their farm as difficult made comments such as:

> *Run down*
>
> *Stressful, time-consuming*
>
> *Pitiful*
>
> *Desperate*
>
> *A headache*
>
> *Hard work*
>
> *A money sponge.*

More such verbatim responses are provided in the results section along with quantitative data, as appropriate. This important illustrative information helps us to better understand producers' perspectives. It is one of the advantages of using an interview approach, which is now described below.

9.2.2 Structured Interviews

The labour intensive method of on-farm interviews was used in order to increase ecological validity, qualitative data collection, the commitment capacity of potential research participants and the potential number of group interviews. These interviews were approximately one hour in length, which was a compromise between having long enough to collect rich data and not overburdening interviewees. Interviews were structured by set questions in order to mitigate the variation that was potentially introduced into the data by having a relatively large number of interviewers involved. Despite this structure, the interviews were conducted in a conversational tone to facilitate rapport with the interviewees and the potential of uncovering unexpected insights.

Interview data was recorded with hand-written notes. The alternative of digitally recording and transcribing interviews was judged to be too resource intensive. Hand-written notes also have the advantage of being more transparent for interviewees, removing the fear that some have of being digitally recorded. Interviewers were schooled in how to record appropriate notes. This included the importance of writing additional notes on each interview immediately after it was completed (and they had left the farm) in order to add to and clarify the notes they took during the interview.

9.2.3 Partner Organisations and Local Interviewers

9.2.3.1 Finding and selecting organizations

Organizations were selected based on their location in an area of interest, their local agricultural knowledge and connections, and their willingness to participate. They were subcontracted to do all of the sampling, interview arrangements and interviewing in their area. Some fulfilled this by using their own staff alone, and others recruited capable members of the local community. None of the interviewers involved had a strong knowledge of social research and most had no interview experience. The number of interviewers provided by the organizations varied between 3 and 7 (Table 9).

Table 9 State, partner organisation and number of local interviewers employed

State	Partner Organisation	No. of interviewers
NSW	Mike Stephens and Associates (MSA)	3
Victoria	Birchip Cropping Group (BCG)	4
WA	WA Department of Agriculture and Food (WADAF)	7
Tasmania	Rural Development Services (RDS)	4
Total		*18*

9.2.3.2 Interviewer training and field work

Interviewers were trained intensively in qualitative research and interview technique during a daylong workshop. This training covered topics including the recognition and use of qualitative data, subjectivity and objectivity, the ethics and power relations of research, the challenges of interviewing and note-taking techniques. Active listening techniques were taught and practiced using a combination of theory and role plays. How to encourage the participation of all members of a group interview was emphasised. The interview questions to be used to guide the conversations with interviewees were workshopped and refined and an interview prompt sheet was discussed. Interviewers were asked about their hopes, expectations and concerns about the interviewing process at the start of the training day and reflected on the training at the end of the day.

Interviewers were accompanied on their initial interviews by the trainer and debriefed on the process. The trainer was also available for debriefing during the entire interview period. Each interviewer was encouraged to keep a journal during the interview period to record their reflections about the process, including how they were progressing as interviewers and coping with the interview content.

9.2.3.3 Review of the local interviewer methodology

At the completion of all of the interviews, interviewers were telephoned by a third party to evaluate the method. The results are presented below.

9.2.3.4 What interviewers gained from the experience

At the start of the process, interviewers stated that they were attracted to the work for both method- and content-related reasons. About half of the 18 respondents stated that they were hoping to gain insights into producers in their area and the way they ran their businesses (including decision making processes), while the other half were motivated by the chance to improve their interviewing technique to use in their own work in the future.

> *"I want a greater understanding of what drives producers and the things that they do".*

> *"I want to improve my skills in interviewing people".*

Having completed the process, all interviewers stated that they enjoyed the experience. Approximately half stated that they enjoyed the experience due to the insights they gained into the local farming environment and producers' decision-making processes.

> *"It was enriching. I learnt what the top livestock producers thought, which was good for me as I'm in the rural industry as well".*

> *"I met local people…and got an understanding about the district and the way people farm. That's useful knowledge for me to have in my line of work".*

> *"It reinforced for me that things are not black and white. There are many different ways of doing the same thing and still having success".*

Some enjoyed the experience due to the human interaction (meeting different people with different interests and backgrounds). Others commented on the way in which it allowed them to develop their interviewing skills, with almost two thirds of interviewers feeling they had improved their communication and interpersonal skills.

> *"I met a big range of people, all of who were friendly and who had different interests and opinions".*

> *"I learnt how to get information out of people, how to really draw good answers of people".*

> *"I have been using the skills I learnt to communicate better with people".*

9.2.3.5 Reported strengths

When asked to reflect on what they perceived as their strengths in interviewing, some interviewers discussed their ability to build rapport and credibility with interviewees, reinforcing the assumption underlying the use of local interviewers that this would be an advantage. As some stated:

> *"I am from a farming background so I could relate to what they were saying".*

"People liked that when I called up I could talk about something relevant to their area. I think that helped me out a lot".

Others reflected positively on the interview technique they had learnt in the training, confirming that local interviewers can attain a high degree of interviewing skill with proper guidance. For example, one commented on her ability to draw quality data out of interviewees and another discussed his ability to keep the interview on track while maintaining a conversational tone:

"I found everyone to be quite responsive when I prompted them further rather than just skipping over the question".

"A lot of people kept going off on tangents, but I was able to bring them back onto the topics".

9.2.3.6 Reported challenges

When asked to reflect on the challenges they encountered in the interviewing process, interviewers reported logistics, difficult interviewees and note-taking as the main issues they encountered.

9.2.3.7 Logistics

Almost all interviewers indicated that they had had problems with the logistics and local arrangements in their area. Issues identified were:

- Issues with the MLA database

  "A lot of people I called had moved on or left meat production years ago. Thankfully I didn't call anyone that was dead, like I know some other people did".

- The timing of some of the later interviews coincided with a busy time of year for producers

  "Timing was an issue. A lot of people were really busy and didn't have the time to commit".

  "There was a lot of phone calling and letter writing for not much result. The producers were too busy to make the commitment".

- The amount of travel required and the 'dead time' between interviews

  "It was really hard to get people to pick a time and keep it. Things kept coming up and they would have to reschedule. So rather than travelling 150 kms for 3 interviews, you would find yourself travelling 150 kms and only getting one interview in the end".

These issues were beyond the control of the researchers but were managed by working with MLA and the partner organisations to minimise the existence and impact of each issue. For example, a strong effort was made to complete as many interviews as early as possible, concessions were provided to partner organisations unable to fulfil the full quota of interviews, and partner organisations were encouraged to allocate interviews to interviewers according to geographic area to minimise travel.

9.2.3.8 Difficult interviewees

Difficult interviewees were encountered in a range of guises, notably those what would talk too much and those who would talk too little. The former created the issue of keeping the interview on track:

> *"People would go off on tangents and were up for a lot of chit chat. I had to make a big effort to get them back on track".*

The latter created the issue of trying to draw information out of people:

> *"I had to ask a lot of leading questions to get them going, which isn't what I should have been doing".*

Short answers and general disinterest in the interview was related by some interviewers to the timing of the research, with some producers expressing impatience to get back to work. Other producers had time, but were found to be relatively uninterested in the interview because of the perceived irrelevance of the topic to them. This was the case for soon-to-be-retirees.

> *"When I got there and started the interview they said the questions weren't relevant and they just gave short answers".*

> *"Some questions were irrelevant to some people because they were going to sell their farm soon. It was hard to get people who were planning on staying that had the time to commit to doing a interview".*

This last comment points to a potential bias in the data towards those winding down their farms, although theoretically such producers are also likely to have self-selected out of the sample because of the perceived irrelevance of the topic of training to them. A look at the numbers in each age group (Appendix 3), however, indicates that no such bias exists.

9.2.3.9 Note-taking

Finally, despite guidance and practice during the training, note-taking while listening and directing the interview was mentioned by some interviewers as challenging.

> *"Trying to write everything down as they were talking was a challenge".*

Although this difficulty was reflected in the relatively poor quality of the notes that were received from some interviewers, the strong emphasis on the need for rigour in note-taking that was communicated during the training meant that most were of a good standard.

9.2.3.10 Feedback on the training

Three quarters of the interviewers indicated that they felt well prepared for the interviews. All of these people stated that they felt the training day was a great way to help them prepare. Interviewers were particularly appreciative of the role plays, the explanation of each question, and the background to the project, as well as being accompanied on their first interview and receiving feedback on their technique.

> *"The role plays were good, it was a good practice for the real thing".*

"It was good that we had each of the questions explained to us so we could tell the producers when they asked us what we meant".

"I liked that [the trainer] came with me for my first one. She told me that I was reading the questions a bit too much rather than engaging the interviewee so I knew to watch out for that in my others".

9.2.3.11 Interest in further social research

All interviewers stated that, depending on their workload at the time and the topic area, they would like to do more social research in the future in order to build on their skills and to continue learning about what producers think. As one commented:

"Yes [I would like to do more social research]. I really want to keep utilising the skills I learnt from this project".

9.2.3.12 Summary of advantages and disadvantages of the method

Overall, the local interviewer approach has the following advantages and disadvantages for the project (Table 10).

Table 10 Advantages and disadvantages of using local interviewers and their implications for the research

Advantages		Disadvantages	
Advantage	**Implication**	**Disadvantage**	**Implication**
Capacity building in social research among local interviewers	Social outcome for region	Variation introduced through use of multiple interviewers	Introduces potential bias to data
Increased knowledge of local farming and training practices for partner organizations and interviewers	Greater capacity among partner organizations and local interviewers to respond to regional issues	Interviewers' lack of experience in interviewing and note-taking	Potentially decreases quality of data
Increased connection between producers, partner organizations, local interviewers and MLA	Networks strengthened	May not provide good value for money for interviewers	Potentially decreases social and economic outcome
Employment that interviews represented for local interviewers	Social and economic outcome for local area	Disconnection of interviewers from the research process (research design and analysis)	Potentially decreases quality of interviewing Reduces participatory benefits to interviewers and project
Credibility and rapport with interviewees	Improved quality of data		
Interviewers' knowledge of local context in order to explain questions	Improved quality of data		
Interviewers' feedback on the draft interview questions	Improved quality of data		

9.2.4 The Study Design

This study is based on a cross-sectional design. Structured on-farm interviews with members of farm businesses were held in four regions of southern Australia. Described below, these regions represent four states and four meat production systems or market segments (Table 1.1). Although drought and other issues reduced the number of research participants involved, approximately 50 interviews were conducted in each production system type.

Interviews explored a number of questions relevant to exploring research question one above. At the end of each interview, interviewees in a particular meat production system were asked about the topics listed in research question two that are relevant to their production system (Table 11).

Table 11 Overview of selected regions and partner organisations

State	Region	Meat production system	Special topic(s)	Partner Organisation
NSW	SW Slopes	Specialist Lamb	Cost of Production, Sheep Nutrition	Mike Stephens and Associates (MSA)
Victoria	Wimmera Mallee	Mixed Lamb/Grain	Cost of Production, Crop to Livestock Transition	Birchip Cropping Group (BCG)
Western Australia	Central Agricultural Region	Mixed Lamb/Grain	Cost of Production, Crop to Livestock Transition	WA Department of Agriculture and Food (WADAF)
Tasmania	Northern	Specialist Beef	Cost of Production	Rural Development Services (RDS)

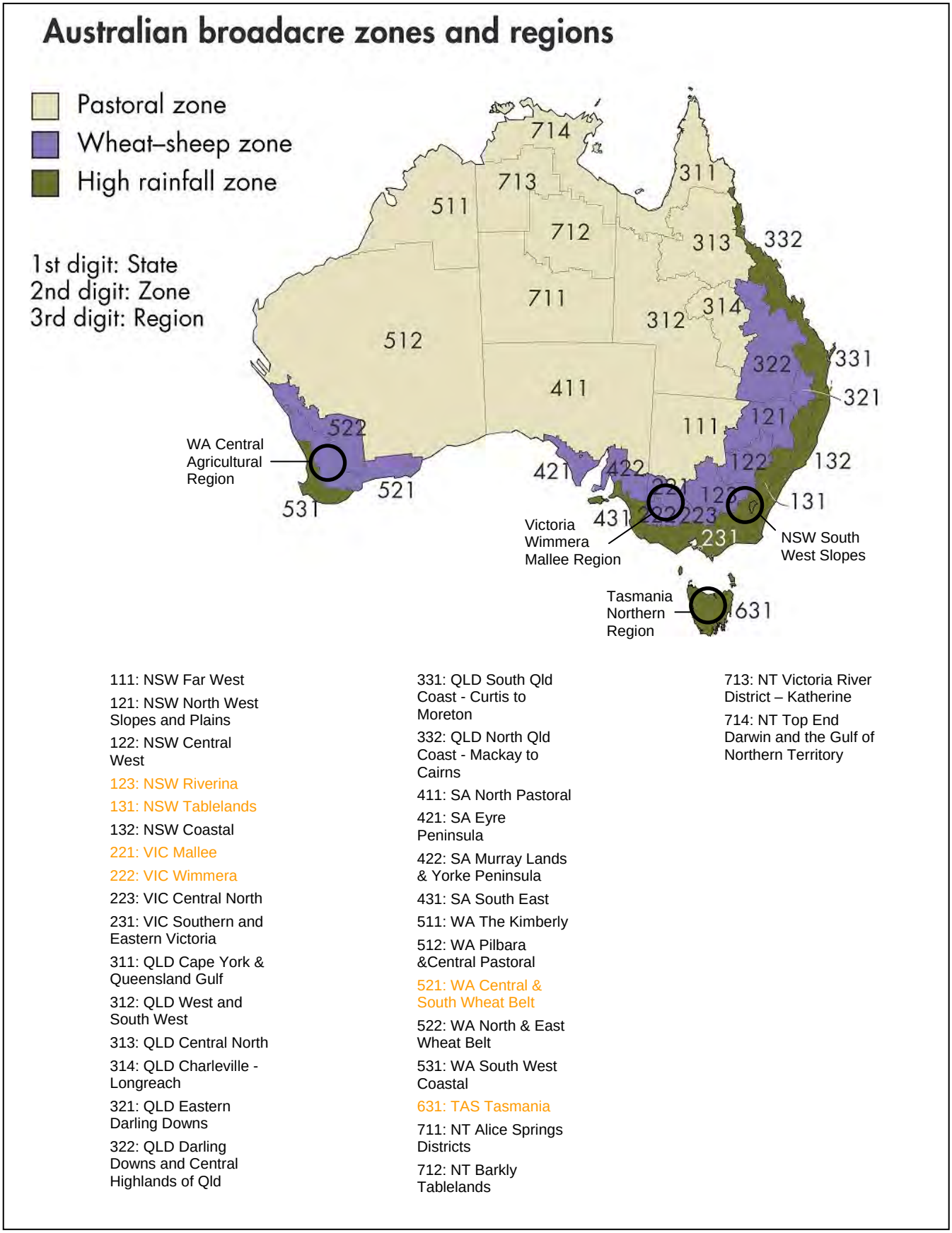
In each region, a local partner agricultural organization organised and conducted the interviews. The use of local interviewers not only bestowed on the research advantages such as credibility with interviewees (discussed in Section 3 below), but it built the capacity of those involved in interview technique and social research. This legacy is of significance given the importance of social research for better understanding producers and their needs, and given the close association between sound, ethical interview technique and effective 1:1 consultations with producers. Raising the interest and skill levels of local agricultural advisors and others in listening effectively and systematically to producers is a significant step in assisting producers themselves and thus the industry they are a part of.

9.2.5 Southern Red Meat Producers and the Study Areas

This research is focused on southern meat producers. Northern meat producers were excluded because their different climatic and production systems and farming circumstances create unique training needs that need to be investigated separately.

The sample of southern meat producers was clustered geographically and agriculturally. NSW, Victoria, Western Australia and Tasmania were chosen as the southern states of interest. South Australia was excluded because visiting 50 farms in a region would involve an impractical amount of travel, given the extensive nature of much meat production in the state. A region was selected in each state to represent a particular meat production system, as outlined above, and to align with partner organisations' areas of interest. The resultant four study areas and their relationship to broadacre zones and regions used by ABARE and MLA are shown on the map below (Figure 14).

Figure 14 Study areas in relation to the broadacre zones and regions used by ABARE and MLA (http://www.abareconomics.com/ame/mla/regions.html)



111: NSW Far West

121: NSW North West Slopes and Plains

122: NSW Central West

123: NSW Riverina

131: NSW Tablelands

132: NSW Coastal

221: VIC Mallee

222: VIC Wimmera

223: VIC Central North

231: VIC Southern and Eastern Victoria

311: QLD Cape York & Queensland Gulf

312: QLD West and South West

313: QLD Central North

314: QLD Charleville - Longreach

321: QLD Eastern Darling Downs

322: QLD Darling Downs and Central Highlands of Qld

331: QLD South Qld Coast - Curtis to Moreton

332: QLD North Qld Coast - Mackay to Cairns

411: SA North Pastoral

421: SA Eyre Peninsula

422: SA Murray Lands & Yorke Peninsula

431: SA South East

511: WA The Kimberly

512: WA Pilbara &Central Pastoral

521: WA Central & South Wheat Belt

522: WA North & East Wheat Belt

531: WA South West Coastal

631: TAS Tasmania

711: NT Alice Springs Districts

712: NT Barkly Tablelands

713: NT Victoria River District – Katherine

714: NT Top End Darwin and the Gulf of Northern Territory

The South West Slopes region of NSW is an extensive area of foothills and isolated ranges on the lower, inland slopes of the Great Dividing Range. Farms in this area tend to specialize in lamb production.

The Wimmera Mallee region of north-west Victoria is one of Victoria's main 'production zones' (Barr et al. 2005). A large flat area, the region is dominated by wheat and barley cropping, with sheep and wool enterprises spread throughout (Grain & Graze 2007).

The Central Agricultural Region in Western Australia is the core of the Western Australian "wheat belt". There are around 2500 mixed grazing and cropping farms in the region; grains represent 75% of these farms' income, while grazing (sheep) accounts for 12% (Grain & Graze 2007).

Like the rest of the state, agriculture in northern Tasmania is dominated by beef cattle farms, which account for approximately 30% of farms. Existing in an increasingly peri-urban environment, sheep, dairy and vegetable farms are also common (ABS 2004).

9.3 Appendix 3: Results

The following section presents the main quantitative and qualitative results generated by the research, looking first at producer characteristics and then training characteristics that potentially influence participation in training. Results about interest in MLA's specific training proposals are then presented before all results are discussed in light of what they reveal about producers' felt needs and their relationship to various factors.

Most results are presented as percentages. Information on frequency distribution is available in Appendices 3 and 5.

9.3.1 Producer Characteristics Influencing Participation in Training

This section presents results about the importance producers place on training, their past experiences with training and their intentions for training in the future.

9.3.1.1 Perceived importance of and participation in training

9.3.1.1.1 General importance of training

Most producers reported that they believe that formalised professional development is generally important, with 80% of respondents rating its importance as either 4 or 5 out of 5 (Figure 15).

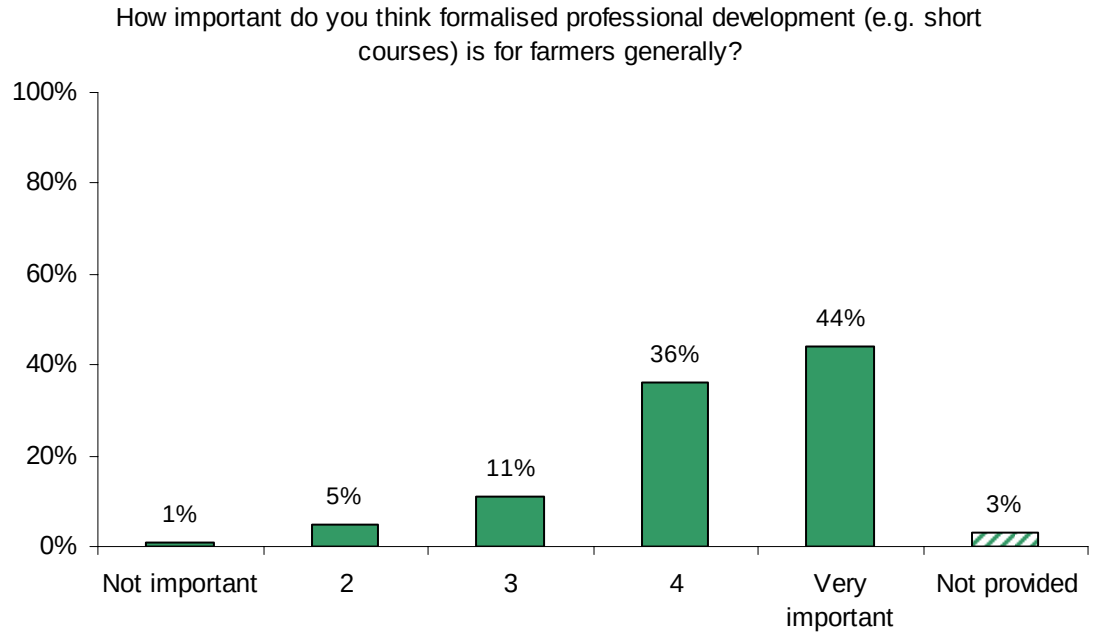


Figure 15 General importance attributed to training

Comments by some producers illustrate their positive attitude towards training in general:

Am keen to improve all skills with whatever training is accessible

I welcome all training and go with an open mind

There are some notable differences between producer segments, however (Table 12). NSW and Victorian producers, those aged under 30 or over 60, females, those with post-graduate qualifications, and those with a medium farm size (201 to 600 ha) were most likely to consider formalised professional development as very important (rating it a 4 or 5 out of 5). Differences between enterprise type were very small, reflecting the mixed enterprise character of most properties.

Table 12 Variation across demographic segments of importance attributed to training (% of those in each segment who rated importance a 4 or 5 out of 5)

Producers who considered formalised professional development to be very important, by…	Greatest importance	Least importance
State	NSW (50%) Victoria (48%)	WA (40%) Tasmania (40%)
Age	Under 30 (50%) 60 plus (51%)	30 to 44 (37%)
Gender	Females (52%)	Males (42%)
Education attainment	Post graduate qualification (100%)	<Postgraduate (42% to 46%)
Farm size	201 to 600 ha (56%)	Up to 200 ha (40%) 601 ha+ (40% - 42%)
Enterprise	Little variability from the overall result of 44%	

9.3.1.1.2 Participation in past training

Overall, 88% of producers indicated that they have participated in at least one professional development training activity in the past. This is higher than the 80% participation rate reported for Australian farm businesses by the Australian Financial Survey (see Section 1.4.2). While few producers specified particular courses they have attended, some of those most commonly mentioned by name were Prograze, Sustainable Grazing Systems and Farm Management 500.

Highlighting that attitudes and behaviours are not always aligned, the relationship between the general importance attributed to training and prior participation in training appears to be weak. A relatively high proportion of those who have not participated in any training still rated training as important or very important, although the 14% who did not the answer the question presumably do not think it is (Figure 16).

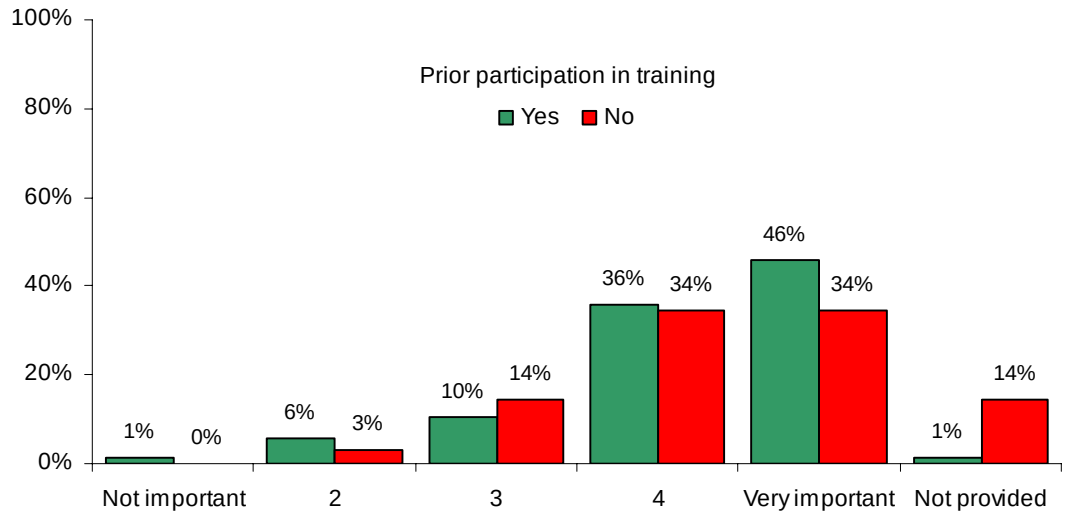


Figure 16 Prior participation in training by the importance attributed to training

The variability in participation among producers segmented by key demographic variables is also small, with the exceptions of Tasmania (only 75% participation) and producers on less than 200 hectares (73%) (Figure 17); two variations that are likely to be inter-related given the large proportion of small properties in the Tasmanian sample. The relatively low level of participation in Tasmania is consistent with previous research findings (see Section 1.4.2.2), and the relatively low level of importance attributed to training by Tasmanian respondents.

The difference in the training participation rate according to enterprise group in this study was very small (lamb 91%; wool 89%; cattle 86%; grain 91%). The slightly lower participation rate among beef producers is consistent with the Tasmanian result and Kilpatrick's (1996) finding that such producers had the lowest participation rates.

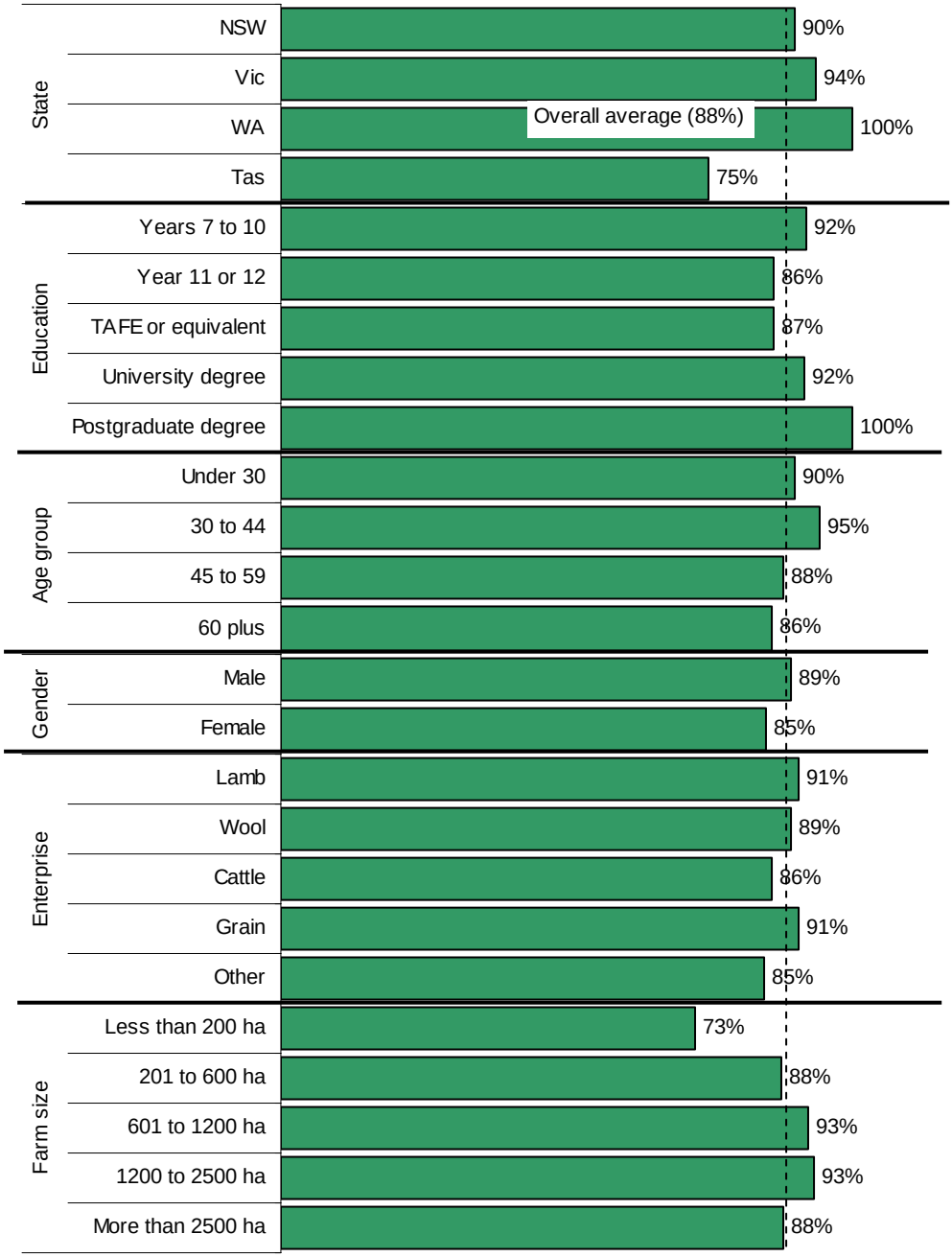


Figure 17 Demographic profile of training participants*

*Note: Percentages represent the proportion of the sample in each row who have participated in training (eg. 90% of NSW producers have participated in training). The dashed line represents the average of the overall sample.

9.3.1.1.3 Satisfaction with and use of past training

The 88% of producers who had participated in training in the past were asked:

- "Have you been satisfied with this training? Why? Why not?"; and
- "Have you used this training to change what you do on the farm? If so, how?"

Overall, 82% of those producers who had participated in training provided positive feedback about the training, indicating that they had been satisfied with it. 7% were dissatisfied and 7% were unsure.

Satisfaction was highest among Western Australian producers (95% satisfied) and lowest among NSW producers (only 69% satisfied) (Figure 18). The latter may be related to the "non-negotiable" training that a number of NSW producers complained they have been forced to attend by the Lachlan CMA in order to access grants (an example of linking training to market based instruments for practice change). As two remarked in their final comments of the interview:

> *Don't have Mickey Mouse courses - don't have mandatory courses like Lachlan CMA.*
>
> *Do not tie training to grants as the local CMA does - it is a rort and a waste of time.*

Others also commented negatively on training driven by externally perceived needs. One producer stated that much of the course he had been to was 'regulatory' so he 'just learnt what was necessary to pass'. Another commented that the training he had been to 'has generally been to get them off our back and get accreditation'.

While there were no notable differences in satisfaction levels according to enterprise type, producers on large properties were most likely to be satisfied (95% satisfied), whereas those on properties of 200 hectares or less were likely to be less satisfied (69% satisfied). This could reflect a bias in training towards providing for the needs of larger producers, given the assumed relationship between farm size, success and innovativeness discussed in Section 1.4. Two smaller producers commented:

> *Training is geared toward bigger producers*
>
> *Need to make training more relevant to farmers of all sizes.*

Notably, those with postgraduate degrees rated past training most poorly, with only 20% reporting that they were satisfied with it. Those with a year 7 to 10 education level also gave a relatively low satisfaction rate of 69%. Together, this pattern suggests that the training being provided may be best suited to those with a moderate level of education.

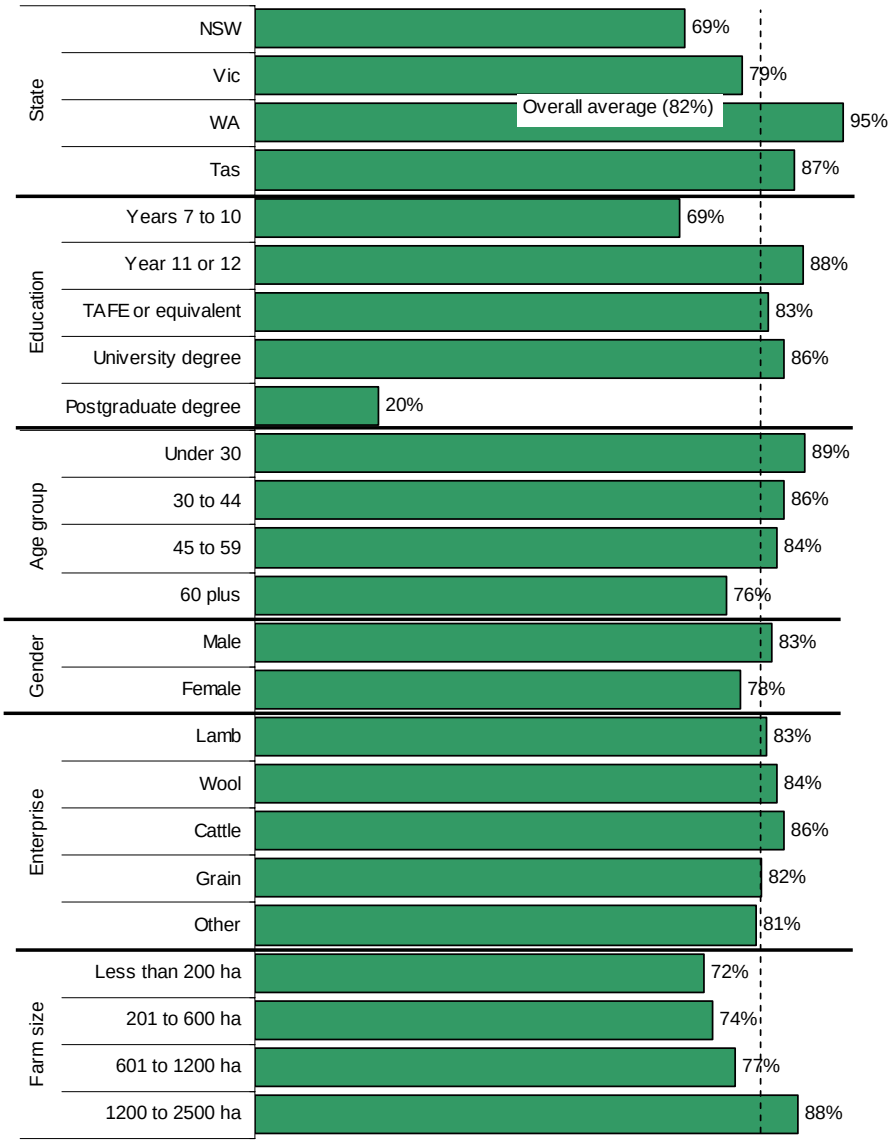


Figure 18 Demographic profile of satisfied training participants

Table 13 contains a summary of the reasons that producers were satisfied or dissatisfied with the training that they received.

Table 13 Summary of reasons for satisfaction or dissatisfaction with training

82% of producers were satisfied because, the training was…	**7% of producers were dissatisfied because the training was/had…**
• Relevant • Well presented • Enjoyable • Practical	• The wrong level of information • Poorly presented • Irrelevant • Insufficient information • Too long

One producer who was dissatisfied with the training commented that the course he had been on was falsely advertised as being something it was not, while another complained that one she had

attended was ‘all just common sense’. The findings above about education level suggest that the complaint that training provided ‘the wrong level of information’ refers to information being not only too sophisticated for some, but too simple for others.

Comments by some of those satisfied with their training experiences to date suggest that they enjoyed it and found it relevant because of its alignment with their felt training needs:

> *The subject was close to my heart.*
>
> *I learnt what I wanted.*

For some, these needs were to gain a sense of options available:

> *It gave the overall perspective and introduced all aspects, which is what I wanted.*
>
> *I learnt how to look at the big picture.*
>
> *I like being introduced to the new options.*

Some focused on the way the training was delivered:

> *Producers fed off each other.*
>
> *It was timely and delivered in a way that’s easy to handle with on-going support and networking with people who’ve done similar training.*
>
> *It was well-delivered with excellent take home messages and good follow up.*

Some focused on the act of learning, revealing a positive attitude to training and learning in general:

> *I always learn something.*
>
> *I always get something from it.*
>
> *I learnt something every time.*

This focus on learning suggests that training satisfaction is not necessarily linked to practice change. In keeping with this, some commented that they were pleased to find the training did not require them to change:

> *It reinforced my own ideas.*
>
> *It reconfirmed what I am doing.*

When those who had participated in training were asked if they have used the training to change what they did on their farm, 85% of producers reported that they have. This included: 90% of Victorian producers compared to 74% of Tasmanian producers; 94% of producers with TAFE level education compared to 60% of those with a postgraduate degree; 100% of those under 30 compared to 79% of those aged 45 to 59; and 94% of those on 601 to 1200 ha compared to 69% of those on less than 200 ha (Figure 19).
If practice changes arising from training are taken as a sign of its usefulness, these trends suggest that younger producers and those with a moderate degree of education and a medium

sized farm have found their training most useful. Motivation to implement a change will also be attenuated by the ability of these groups relative to others to implement what they have learnt.

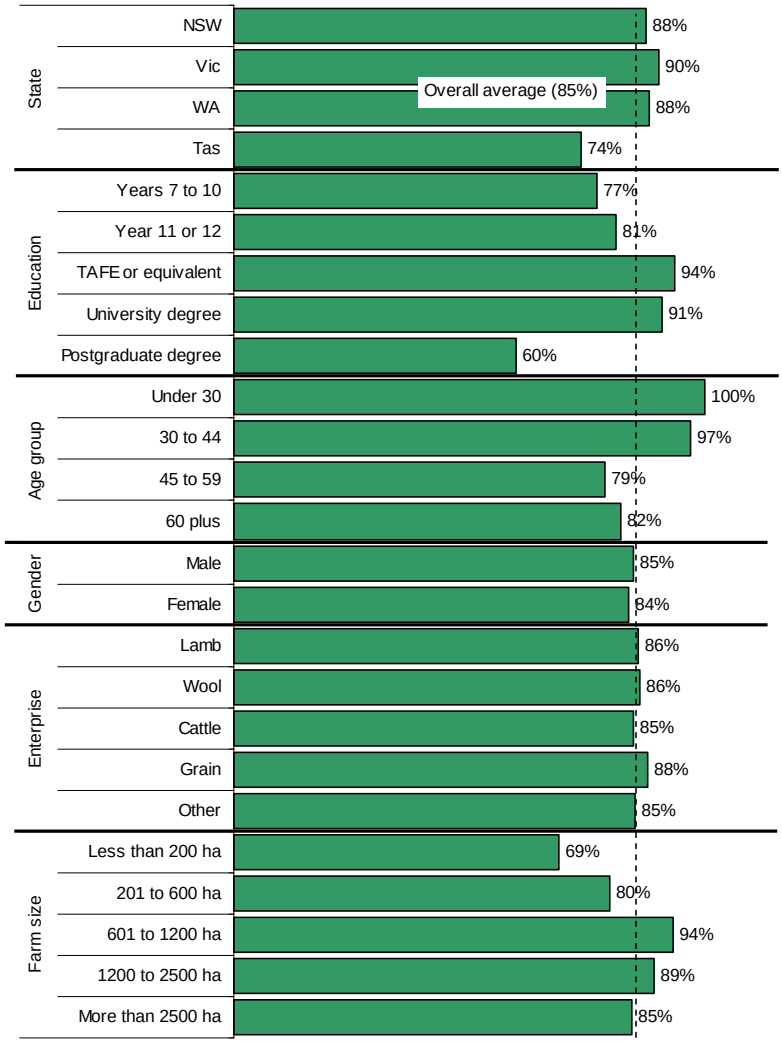


Figure 19 Demographic profile of training participants who have used their training to change their on-farm practices

9.3.1.1.4 Intended future participation in training

When asked about their training intentions, about a third (34%) of producers indicated that they are likely to undertake some form of training or education in the next 6 months and about a fifth (18%) indicated they are likely to undertake some form of training in the next 1-2 years. These two questions were asked independently, such that those who reported they intend to train in the next 6 months are not automatically included in those who reported they intend to train in the next 1-2 years.

Producers' plans about future training in the next 6 months do not appear to be influenced by the importance they attribute to training in general (Figure 20). Indeed, among producers who reported that they consider training to be very important, marginally more reported that they had no plans for training in the next 6 months than those who reported that they did have such plans. A similar trend was found for plans for training over the next one to two years.

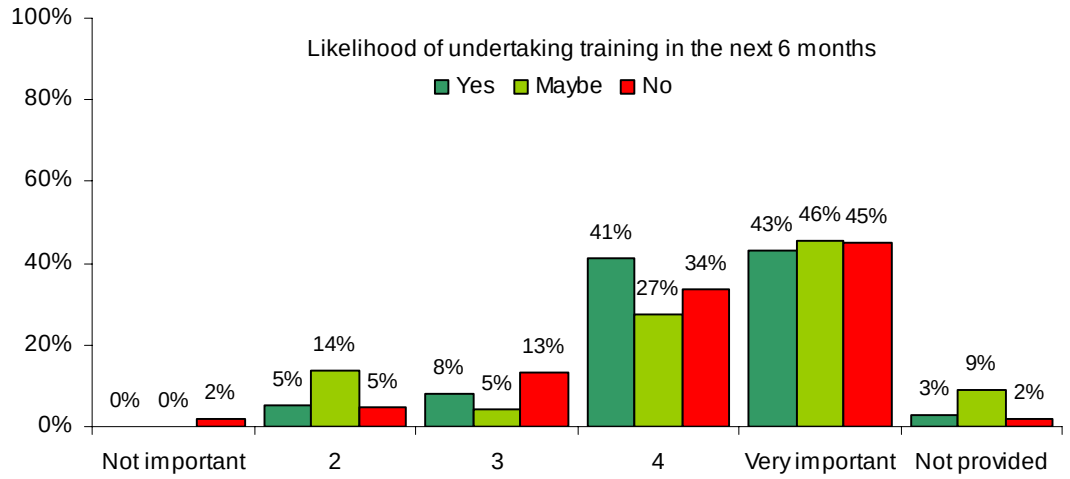


Figure 20 Likelihood of undertaking training in the next 6 months by the importance attributed to training

In keeping with previous research findings, there appears to be a stronger relationship between intentions for training and past participation in training (Table 14). However, as the table below shows, there is still a high past training participation rate among those people who do not have plans for future training or who only have tenuous plans (the 'maybe' responses).

Table 14 Percentage of those with plans to undertake future training who have participated in past training

	Plans to undertake training in the next 6 months			Plans to undertake training in the next one to two years		
Participated in past training?	Yes	No	Maybe	Yes	No	Maybe
Yes	99%	82%	86%	100%	84%	97%
No	1%	18%	14%	0%	16%	3%

There were some notable differences in the proportions of producers in different states who indicated that they were likely to undertake some form of training (Figure 21). In Victoria and WA, more than half the producers surveyed indicated that they would be undertaking some form of training within the next six months (52% and 57% respectively). Strikingly, however, only 8% of Tasmanian producers reported planning to undertake any form training in the next 6 months and only 2% are planning to undertake any form training in the next one to two years. These findings are consistent with the relatively low importance attributed to and past participation in training that characterises this group.

They are also consistent with the finding that few producers with small hectare properties (less than 200 hectares) were likely to undertake training in the next six months (5%) or in one to two years (3%).

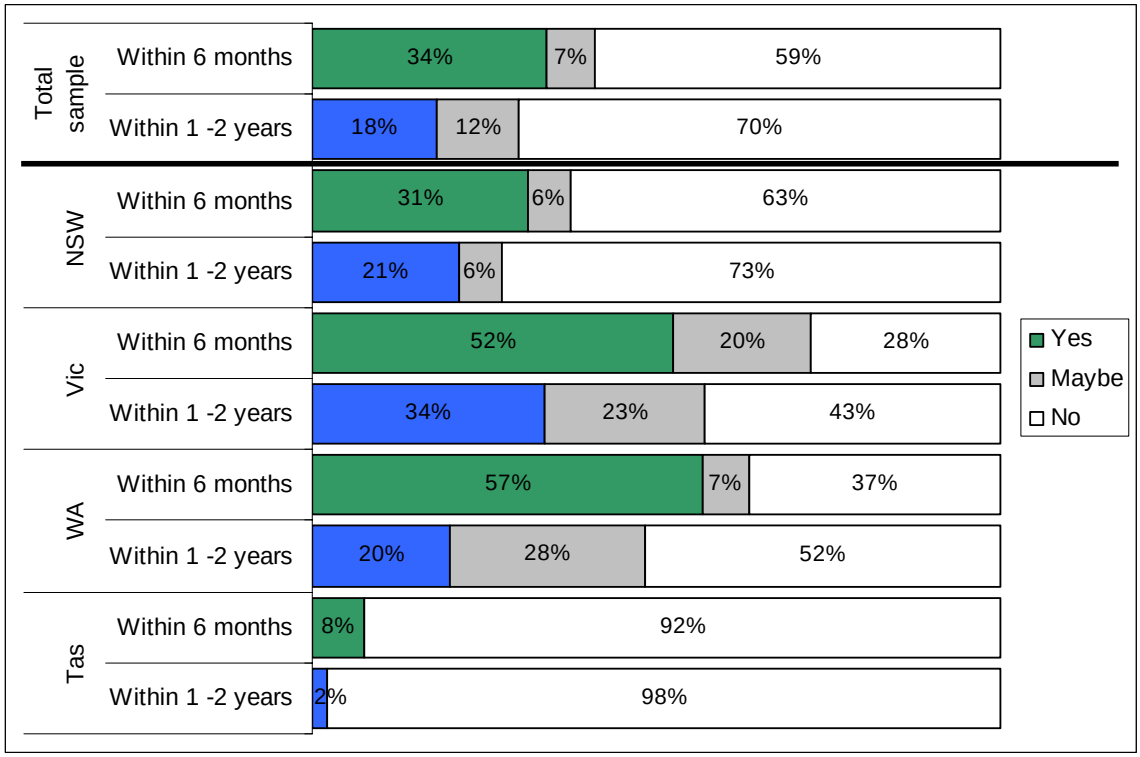


Figure 21 Likelihood of undertaking training in the near future by state

Producers with TAFE or equivalent qualifications were most likely be undertaking training in the next 6 months (46% “yes”), followed by producers with education only up to Year 10 or equivalent (39% "yes") (Figure 22). In contrast, only 25% of those with Year 11 or 12 education were planning to undertake training in the next 6 months. This finding is inconsistent with the general pattern reported in the literature, which is that higher levels of formal education are associated with higher levels of participation in training. It is broadly consistent, however, with the above reported levels of satisfaction with training.

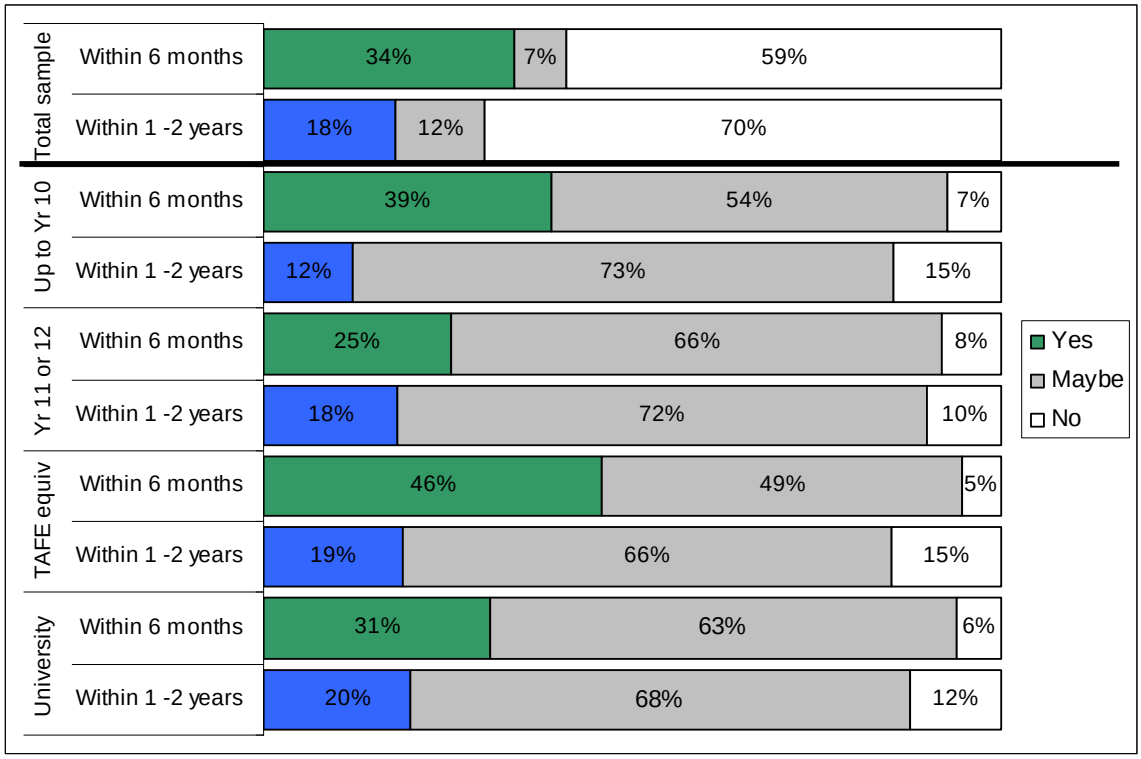


Figure 22 Likelihood of undertaking training in the near future by education level

Another notable differences was that 50% of producers aged under 30 were planning to undertake training in the next 6 months, whereas older producers were much less likely (only 29% aged 45 to 59 and 32% of producers aged 60+ said "yes"). This finding is consistent with the literature, which reports that younger age is associated with higher participation rates in training.

Overall, it is notable that the difference between satisfied and dissatisfied producers in relation to their intentions to undertake training in the future is negligible:

- 34% of satisfied producers had define plans to undertake training in the next 6 months, as did 39% of dissatisfied producers.
- 18% of satisfied producers had define plans to undertake training in the next one to two years, as did 22% of dissatisfied producers.

This could suggest that low levels of satisfaction with past training do not stem from producers' lack of interest in training *per se*, but may instead represent their relatively high expectations of training.

As for previous questions, the differences according to farming enterprise were relatively small. The fact that beef producers had the fewest training plans is consistent with the finding in Kilpatrick (1996) that beef producers had the lowest participation rates in training:

- Lamb: 38% in the next 6 months and 19% in one to two years;
- Wool: 35% in the next 6 months and 15% in one to two years;
- Beef: 28% in the next 6 months and 14% in one to two years; and
- Grain: 42% in the next 6 months and 21% in one to two years.

9.3.1.1.5 Source of past training

Producers who had participated in past training had received their training from a variety of organisations. The verbatim responses were grouped into various forms of training provider. The main groups mentioned as a source of training were:

- Private sector organisations (58%)
- State government (47%)
- Formal education institutions (29%)
- Farming organisations (27%)
- National research development corporations (RDC) (19%)
- Catchment Management Authorities (CMA) (6%)

The above results were analysed to determine whether there were any differences in plans for training in the next 6 months and in the next one to two years (Figure 23). As shown below, producers who had undertaken training with a private sector organisation - the most common source of training - were most likely to have definite plans for training in the next 6 months (69%) and in the next one to two years (61%), suggesting that such training generates something of a positive feedback loop.

Producers who had undertaken training with a Catchment Management Authority (CMA) were least likely to have definite plans for future training. This could reflect the lack of satisfaction expressed about CMA run courses in NSW and/or the fact that those who have attended only CMA courses have been obliged to attend training and are not interested in training *per se*. This group is also most likely to have done an environmental management oriented training course, which may not lead on to further courses in the same way that more specific production oriented courses often do.

In terms of national RDC training activities, it is significant that not only had relatively few producers attended such an activity, but a relatively small proportion of them had plans for future training.

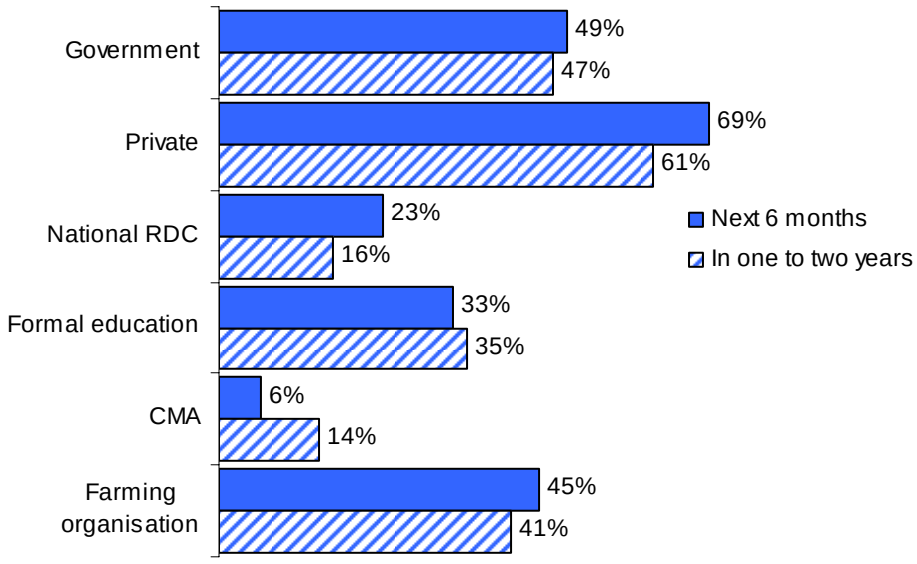


Figure 23 Plans for training according to source of previous training*

* Note: the categories in the rows (the intention to train in the next 6 months and the intention to train in the next 1-2 years) are not mutually exclusive and so can jointly exceed 100%.

9.3.1.1.6 Plans, decisions and information

Producers' plans and decisions about their farm and the information they will use to help them are presented in this section in order to understand their needs and contextualise the role that training does or could play for them.

9.3.1.1.7 Producers' plans for their farms

Producers' plans for their farms ranged from expansion or major change, through business as usual and consolidation, to winding down and looking at alternatives.

Overall, most producers' plans for their farms were associated with the first: with growth and improvements to their property. They described their plans as:

- Increase productivity (40%)
- Increase infrastructure (16%)
- Increase size (15%)
- Improve finances (15%)
- Major conservation and environmental management activities (7%).

Some of the specific plans reported are:

> *Resow all arable land to legume pastures, improve lambing percentages*
>
> *More hay, expand stud, more workers, update machinery, on-farm storage*
>
> *New varieties of grain, get prime lamb breed back, make farm water self-sufficient*
>
> *Keep improving, maintaining ewe numbers of stud*
>
> *On-going improvement – fencing, water, fertility*
>
> *Specialisation in meat production*
>
> *Double in size*
>
> *Improve then sell or buy again*
>
> *Respond to market and seasons, strategic changes in enterprise, productivity evaluations and be flexible and ready to take on new opportunities.*

21% indicated that they had no plans to change and 9% indicated they wanted to consolidate following a period of expansion. Some in this category of 'consolidation' talked about survival being their number one priority or discussed the need for a period of drought recovery. As some stated, their plans are to:

> *Make some money for a change*
>
> *Avoid going broke, maintain financial position, retain core breeders*

Remain viable

Concentrate on getting kids through school and uni

Survive as a family farm operation.

A notable proportion of others are looking to 'wind down' their farming operations, with 21% reporting they are intending on selling their farm, which provides a thought-provoking insight into changes occurring in the sector. Others in this category of producers who are moving away from agriculture are those who are looking to scale down their operations (7%) and those looking to obtain more of their income from alternative sources (5%). Some in this category reflected a degree of uncertainty about their plans. As some stated, their plans are to:

Destock altogether? Perhaps get out of lamb

May sell depending on health issues

Am having difficulty coming to terms with what to do with the farm – looking at easier options to create an income.

While there were small differences between the main plans producers reported across the states, expansion was the most common aim in all states and consolidation was the least common, except for in WA were winding down was less common than consolidation (Figure 24). Winding down was most commonly reported as a plan by Victorian producers.

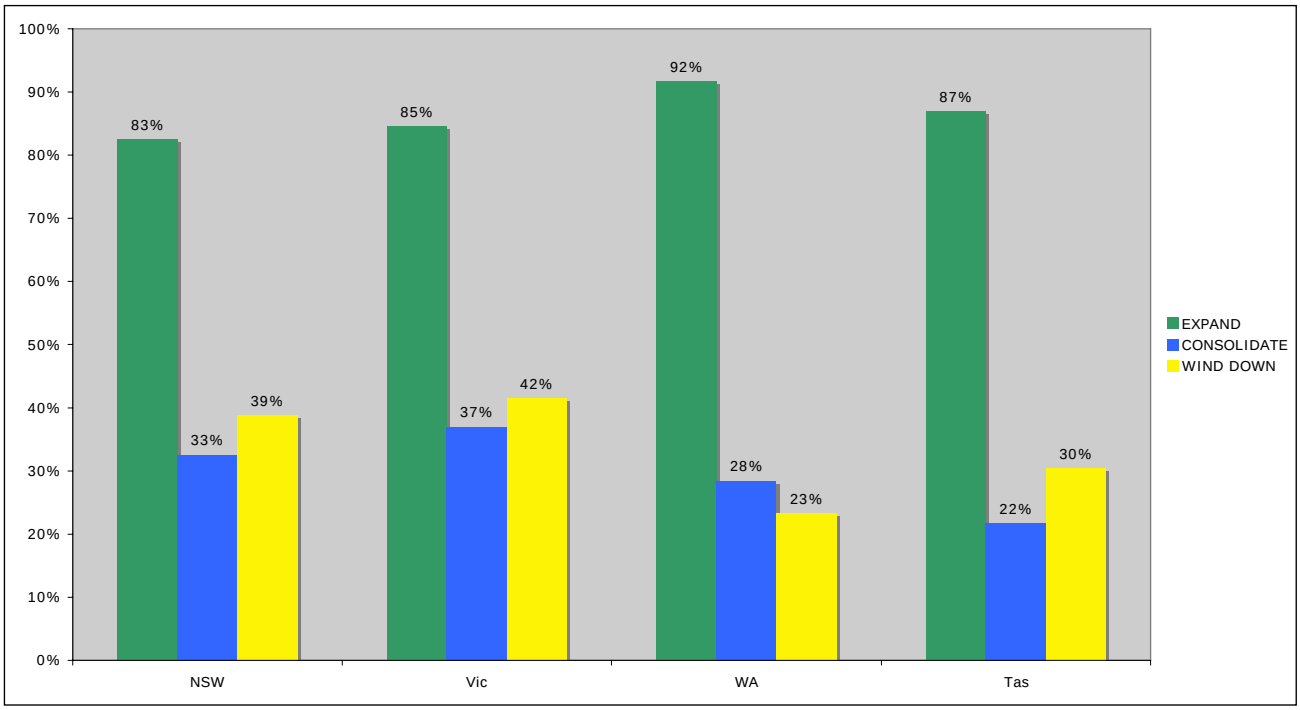


Figure 24 The main categories of farm plans by state

The prevalence of the three main categories of farm plans vary across age groups, with those 30-44 most likely to be planning some kind of expansion (Figure 25).

Surprisingly, those most likely to be 'winding down' are under 30, with 50% of the 10 individuals in this age group looking to sell and one looking to reduce their focus on the farm. This could reflect the impact of the drought on this population, as it is likely that, as found in the BCG (2007) report, many young farmers' and their families' have experienced nothing but below average seasons since they began. Combined with their typically greater financial vulnerability, other issues such as schooling particular to this age group, and the relatively greater array of career options they have compared to older farmers, this is likely to make farming a difficult choice for them. None in this age group reported that they are looking to increase their off-farm income or consolidate their current position.

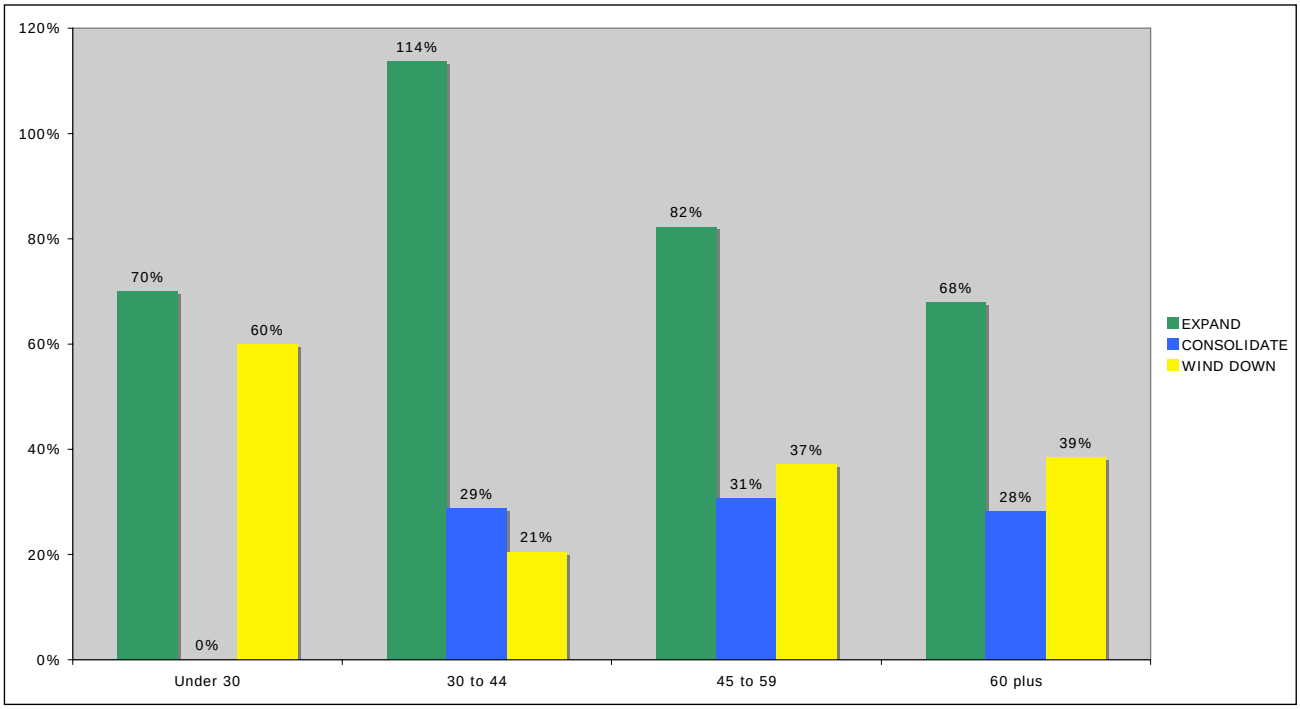


Figure 25 The main categories of farm plans by age group*

Note: Because individuals often provided multiple responses within what were subsequently grouped as categories, the total responses per category may exceed 100%.

The following chart shows the overall rate of participation in training according to producers' plans for their farms as well as their intentions to participate (proportion who indicated "yes") in the next six months and one to two years (Figure 26). Notably all producers (100%) with plans to improve their finances and or those with conservation/environmental plans had undertaken some form of training in the past, whereas producers with no major changes planned had a lower participation rate (84%), suggesting that training intentions in part reflect a dissatisfaction with the status quo.

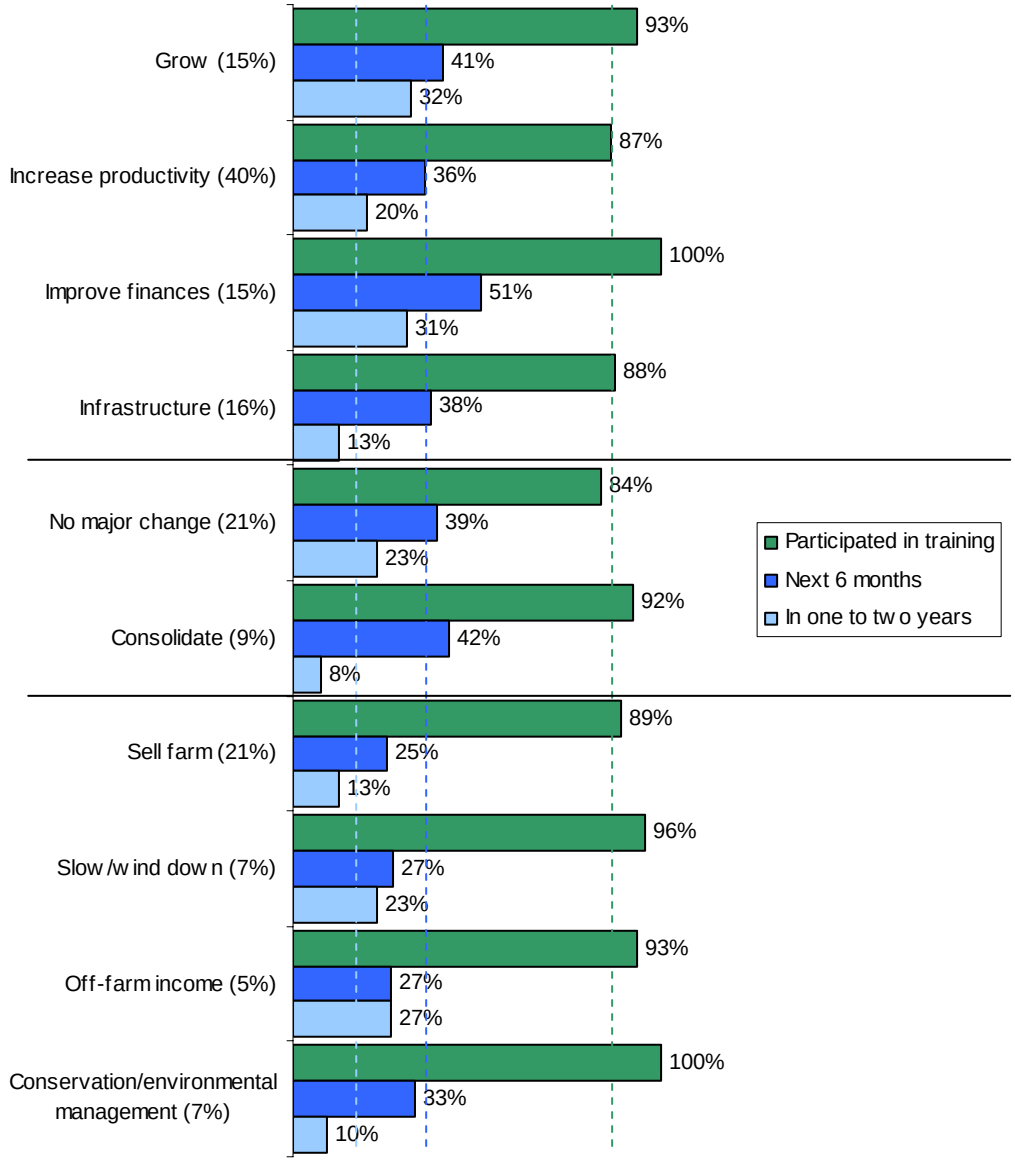


Figure 26 Training participation and intentions according to farm plans

Those most likely to participate in training in the next six months had plans to improve their finances (51% of these producers indicated that they were planning to undertake training in the next six months). A significant proportion of producers with conservation/environmental plans were also likely to have definite plans to undertaken training in the next 6 months (33%).

9.3.1.1.8 Major decisions that producers are facing in relation to their farm

Most producers indicated that they need to make a number of decisions about their farm. The main decisions that producers mentioned they are currently grappling with were related to:

- Technical production issues (61%)
- Drought/climate issues (35%)
- Financial issues (23%)
- Retirement/succession/selling (19%)
- Reducing stock/crops (14%)
- Marketing (5%)
- Expansion (4%)
- Property improvement (3%)
- Environmental issues (2%).

Across the states, the three most frequently mentioned decisions were generally consistent with the overall pattern described above. In NSW more financial, marketing and expansion-related decisions were cited than in other states, in Victoria more drought-related decisions and less financial decisions were mentioned, in WA more technical production decisions and less drought-related decisions were mentioned, and in Tasmania, a notably low number of technical decisions were mentioned (Figure 27).

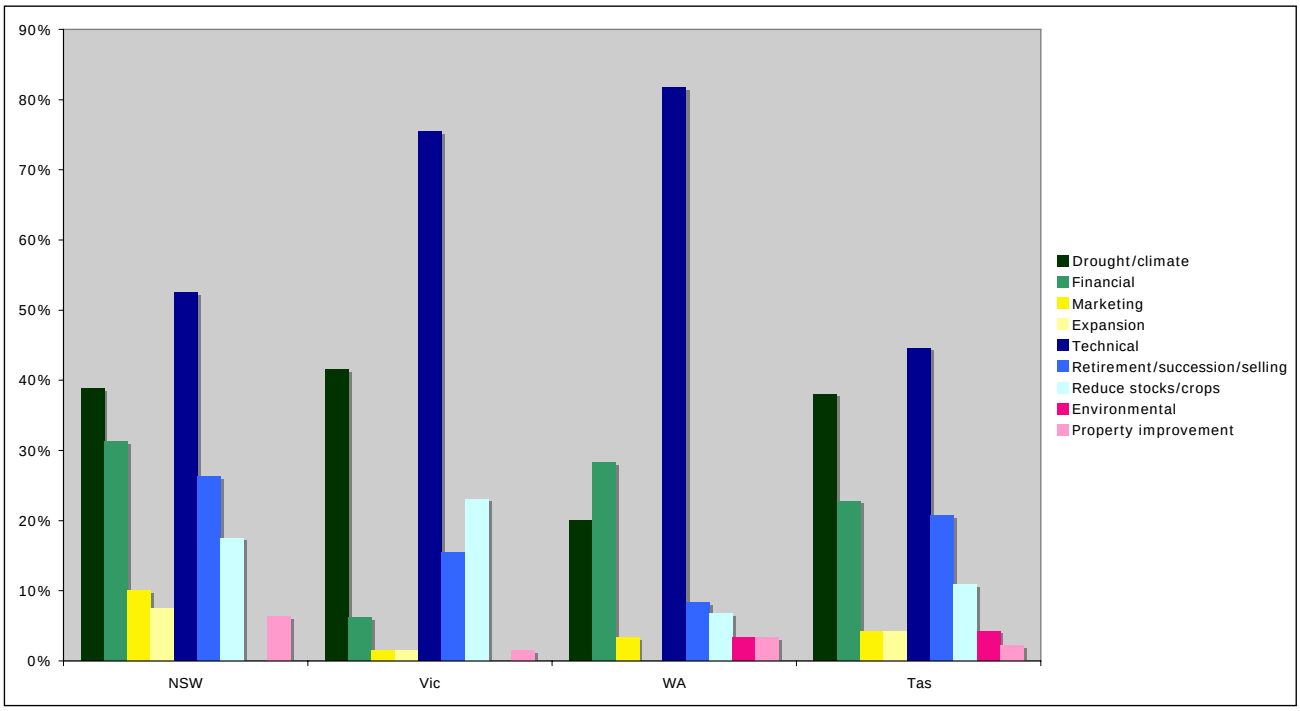


Figure 27 Major decisions producers are facing by state

Results were analysed by participation in training and intentions to participate in training. As shown in Figure 28, the proportions of producers who had participated in training varied across the groups making different decisions, with 98% of those making decisions about reducing stock/crops having participated in some form of training and 80% of those making decisions associated with property improvements having participated in training. 88% of the main group of producers – those making decisions to do with technical aspects of their farm (61% of the total) - had participated in training. The main topics of training were chemicals (34%) and livestock (31%).

Those intending to train in the next six months had farm decisions to make associated with reducing stock/crops (54%) and, related to this, the drought (46%). There was no discernible difference in the decisions being faced by producers in different states.

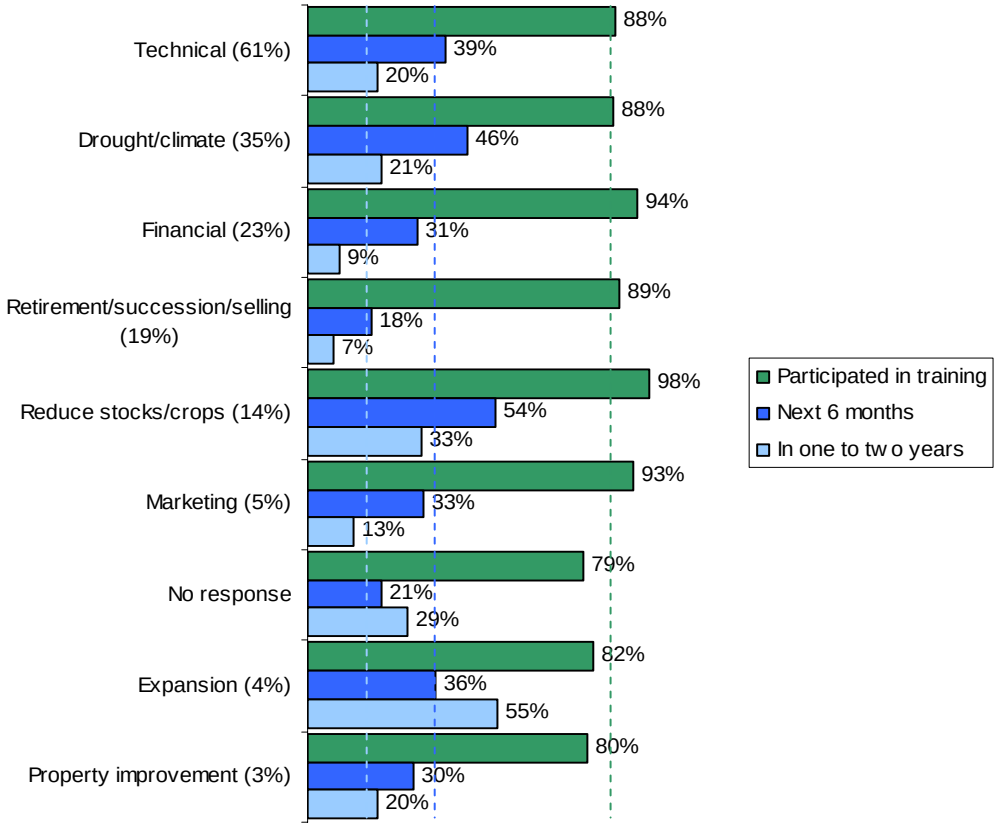


Figure 28 Training participation and intentions according to farm decisions

9.3.1.1.9 How producers plan to make those decisions

Producers typically use more than one method to help them make decisions about their farm. The main methods that producers mentioned that they plan to use to help make decisions about their farm were:

- Professionals* (50%)
- Own experience/calculations (31%)
- Family (28%)
- Networking/ other producers (15%)
- Advertising/media (2%)

- Interviewees generally did not specify whether these were private or public sector.

It is notable that no producers nominated training as one of the methods they plan on using to help them make decisions about their farm.

As shown in the following chart (Figure 29), there is little variation in training participation according to the methods or sources that they rely on to make farming decisions. 91% of producers who consult with professionals have participated in training and 85% of producers who use their own calculations have participated in training.

However the 15% of producers who use networking and other producers to help them make decisions were much more likely to have definite plans for training in the next six months (57%) compared to the 50% who use professionals to help them make decisions (only 32% have definite plans for training in the next six months). This suggests that the latter mode of making decisions represents for at least some producers an alternative to personally acquiring the required knowledge (meeting their felt knowledge needs).

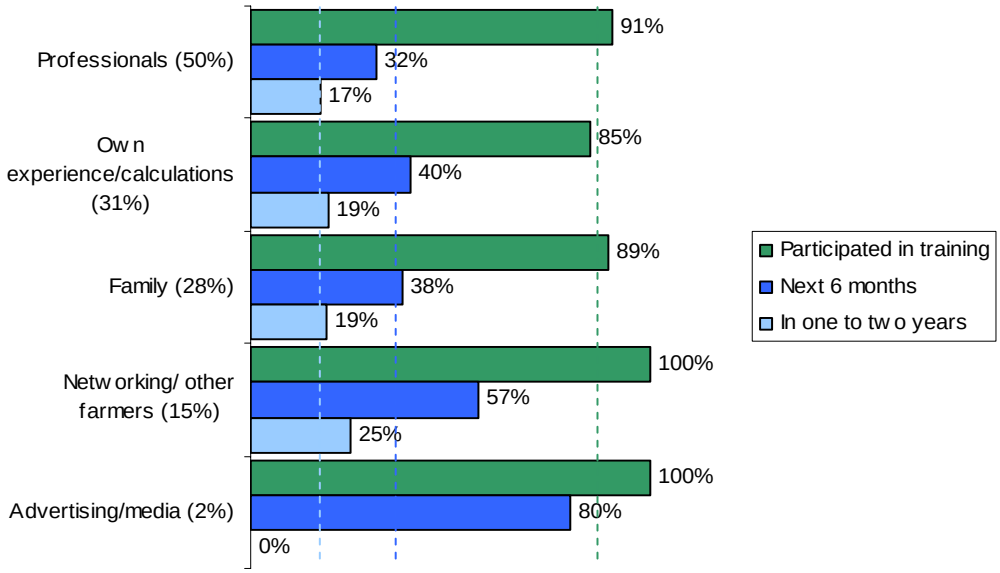


Figure 29 Training participation and intentions according to the method used to make farm decisions

9.3.1.1.10 Sources of information used by producers

80% of producers reported that they feel there is enough information available to fulfil their various felt learning needs. That is, 80% of producers reported that they find they can access a satisfactory amount of information to address the areas they each decide they want to learn about. 76% of NSW producers were satisfied with the amount of information available compared to 88% of Western Australian producers. There was little variability between other demographic segments.

As shown in the following figure, a moderate proportion of producers find the information that is available to be helpful: in total 63% rated the helpfulness of information as 4 or 5 out of 5 (Figure 30).

Producers who were most likely to rate the information as helpful:

- Were aged under 30 (80%).
- Came from Western Australia (75%).
- Had reasonably large farms (601 to 1200 ha) (75%).

Producers who were *least* likely to rate the information as helpful:

- Had relatively small farms (201 to 600 ha) (54%)
- Had other farming enterprises (aside from or in addition to sheep/wool/cattle/grain) (54%)
- Were educated to only the years 7 to 10 level (50%) *or* had a post-graduate degree (40%).

The latter suggests that the information available is generally aimed at those with a moderate level of education but does not cater for those at either end of the spectrum.

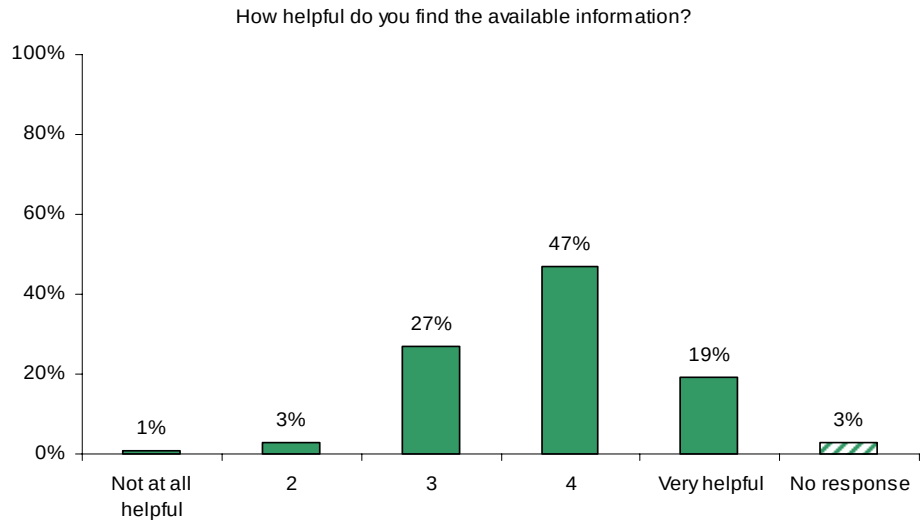


Figure 30 Level of helpfulness attributed to available information

Notably, only 19% of producers indicated that they use previous training as a source of information. Those who reported using training referred to Prograzier, field days and EDGENetwork events, among other activities.

In contrast, there is a heavier reliance on:

- printed material (80% of producers) (eg. The Land, Weekly Times, MLA and other research organization publications);
- professionals (47%) (eg. agronomists, consultants, financial advisors, stock agents);
- the internet (40%) (eg. research organization sites);
- radio and television (21%) (eg. ABC radio, Landline); and
- others' experiences (21%) (eg. neighbours, TopCrop groups).

As shown in the following chart, although there was little variability in the proportion of producers who had participated in some form of training, producers who rely on others' experiences as an information source were more likely to have definite plans for training in the next six months (57%) than producers who relied on printed materials (37%) or professionals (35%) (Figure 31).

This highlights the role that training plays for at least some producers in providing a forum for sharing experiences and suggests that for some producers this role may be more important than its information delivery or information filtering role, which are fulfilled by printed materials and professionals, respectively.

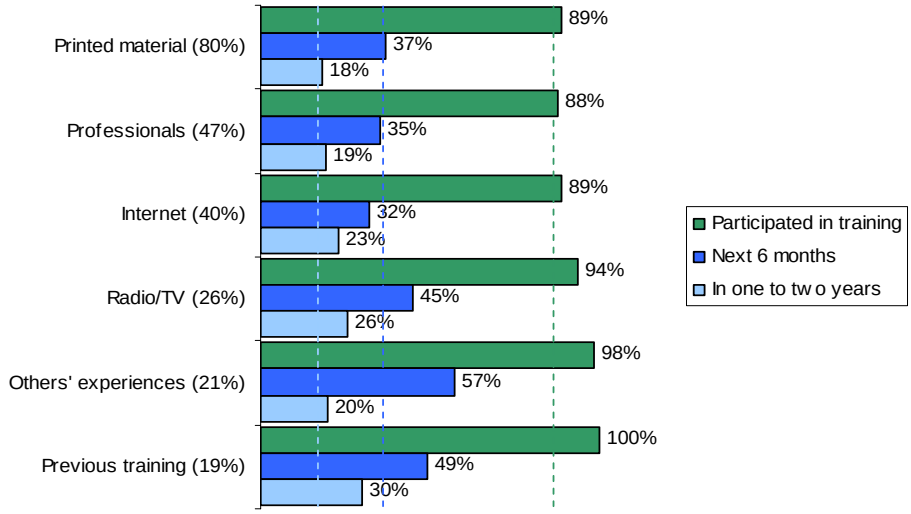


Figure 31 Training participation and intentions according to information sources used

Producers were also asked to provide suggestions as to how farming information could be improved in order to meet their felt needs. Their suggestions were grouped into themes. The main themes were:

1. Make it more concise (23%)
2. Make it more accessible (understandable) (23%)
3. Cover more topics (14%)
4. Ensure that it is relevant to the local area (9%)
5. Make it of a more consistent quality (6%)
6. Make it more timely (3%).

As some commented:

difficult to sort out good stuff

difficult to sort through volume of info

Critical info at critical/ relevant times needed

hard to locate

too much conflicting info

Have less rubbish/ guff - not enough precise/ applicable info

Make it so that you can get all the info in the one place to save time.

Challenge my thinking more

The finer details could be explored and less 'fluffy' stuff

There is an overload, cut out the rubbish

Needs to be more accessible and locally specific.

Some also commented more specifically on the topic areas of the information available, stating that:

Not enough info for small farm

It's too specific. Not good for mixed farms

We need cross discipline info - eg advice from someone not 100% focused on livestock/ cropping.

9.3.1.1.11 Perceived strengths, knowledge and skills

This section describes the strengths and areas of knowledge and skill that producers self-reported. It then looks at how producers have developed these attributes.

9.3.1.1.12 Reported strengths, knowledge and skills

Producers mentioned a range of strengths that they believed that they have as producers. The top ten are listed below:

1. Animal management (36%);
2. Analysis/observation (25%);
3. Business skills (21%);
4. Mechanical/ practical (14%);
5. Positive attitude (12%);
6. Networking (11%);
7. Hard worker (10%);
8. All rounder (strong across multiple farm skills) (10%);
9. Grazing/ pasture (9%); and
10. Organisational ability (7%).

There is little variation in the proportion of producers who have participated in training according to what strengths they reported (Figure 32), apart from relatively low participation rates (73%) among producers who identified their main strength as being an "all rounder". However, there is greater variability in relation to the proportion who have definite plans to undertake training in the next six months. While 51% of producers with mechanical/practical skills have definite plans to undertake training, only 13% of "hard workers" and 3% of "all rounders" have such plans, suggesting that the latter two groups do not see specific training as relevant to the hard work and general skills that they value.

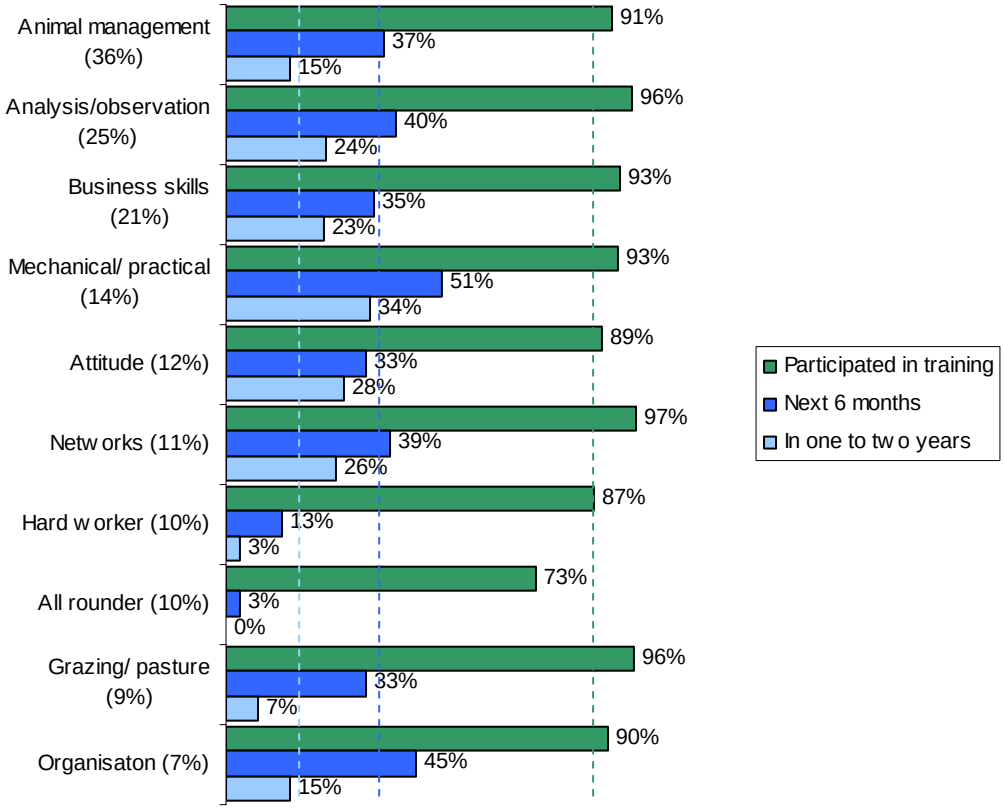


Figure 32 Training participation and intentions according to producers' self-reported strengths

Producers were asked to rate their knowledge and skills in various areas (Table 15) on a five-point scale where 1 = very low and 5 = very high. For analysis purposes, ratings of 1 or 2 were combined to represent "low" and ratings of 4 or 5 were combined to represent "high".

Table 15 Definitions of the knowledge areas producers were asked to rate their knowledge of

Knowledge area	Definition
The science of production	Scientific principles and facts underlying production processes (eg. genetics, nutrition)
Hands-on animal management	Husbandry skills and day to day animal operations
Hands-on crop management	Day to day cropping operations
Business management	Planning, organisation and administration of the business as a whole
Marketing	Sourcing and gaining advantageous prices for products
Financial management	Planning, organisation and administration of the business' finances
People management	Leadership and day to day management of co-workers and employees, including communication skills and strategic use of labour
Training people	Identifying and addressing employees' training needs, including teaching them one-on-one

The following chart shows producers' knowledge is clearly greatest in hands-on animal management (88% rated their level of knowledge as 4 or 5 out of 5) and lowest in relation to training people (only 43% rated their level of knowledge as 4 or 5 out of 5) (Figure 33). The latter suggests that training people may not be relevant for many producers (ie they may not have farm labour or a younger generation to train).

Note that the ratings presented are subjective and do not necessarily reflect an objective measure of producers' actual level of expertise in these areas. It was not possible in this research to compare these self-reported or "felt" ratings with a "test" or baseline of what an outside observer such as MLA may consider high or low levels of expertise.

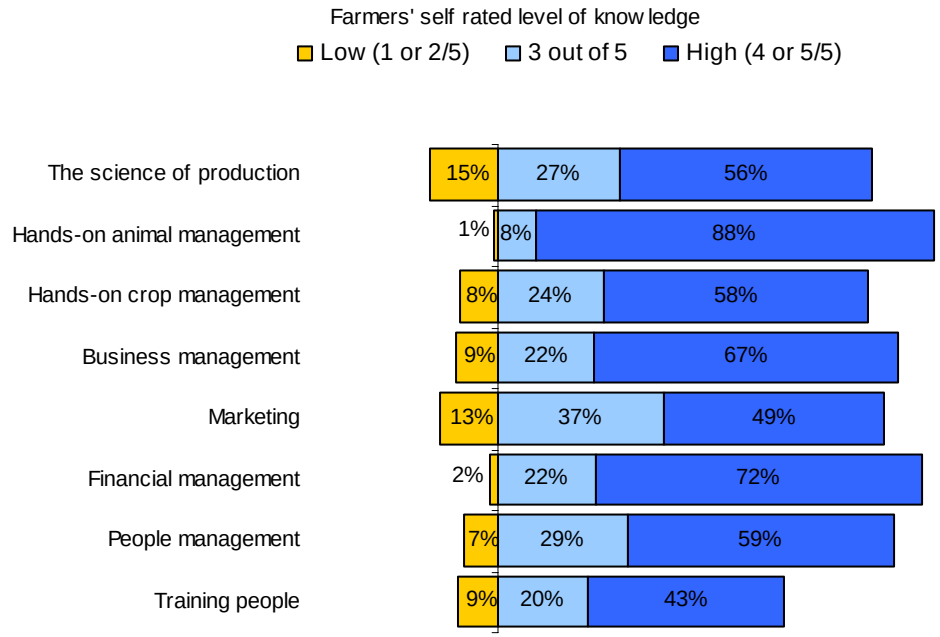


Figure 33 Producers' self-rated level of knowledge in various aspects of farming[1]

The following table compares the proportions of producers who have participated in training or have definite plans to do so by their level of knowledge of various areas of farming (Table 16). Apart from hands on animal management and financial management, the differences in participation in training are quite small.

[1] The "No responses" are not shown in the chart, they represent the difference between the totals across the rows and 100%.

Table 16 Comparison of participation in training according to level of knowledge

Area of farming	Low level of knowledge (1 or 2/5)			High level of knowledge (4 or 5/5)		
	Participated in training	Next 6 months	In one to two years	Participated in training	Next 6 months	In one to two years
Science of production	89%	39%	16%	90%	33%	19%
Hands-on animal management	100%	0%	0%	89%	32%	17%
Hands-on crop management	92%	63%	33%	87%	32%	16%
Business management	89%	52%	33%	89%	31%	19%
Marketing	95%	37%	21%	90%	37%	20%
Financial management	60%	20%	0%	89%	34%	19%
People management	95%	45%	18%	89%	33%	18%
Training people	88%	27%	15%	91%	37%	20%

9.3.1.1.13 Development of knowledge and skills

The main ways that producers have developed their knowledge and skills are summarised as:

- Experience (79%);
- Training (extension) (35%);
- Formal education (25%);
- Other people (13%);
- Family (12%);
- Professional help (9%); and
- Own, independent research (eg. reading, surfing web) (7%).

There is little variation in the proportion of producers who have participated in past training according to the ways in which they have developed their knowledge (Figure 34). However, there is greater variability in relation to the proportion who have definite plans to undertake training in the next six months. 55% of those who gained their knowledge through their own research have definite plans to undertake training compared to only 32% of producers who had gained their knowledge through "experience", suggesting a link between attitudes to types of knowledge and attitudes to training.

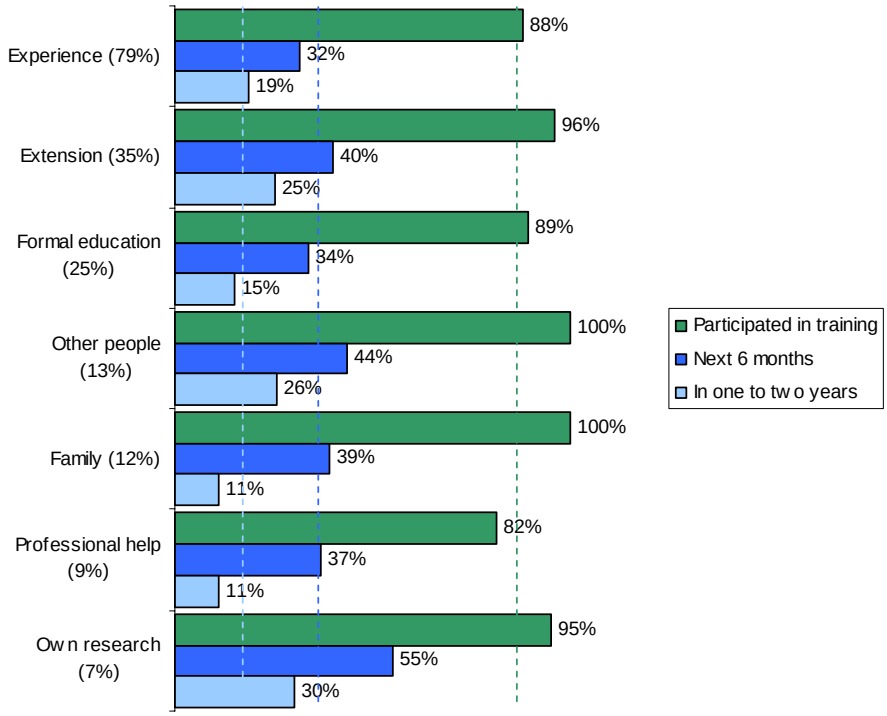


Figure 34 Training participation and intentions according to sources of knowledge and skills

9.3.1.1.14 Perceived farming challenges and skill gaps

This section describes the challenges and areas for improvement that producers self-reported and relates this to their training history and intentions. It then details the barriers to improvement producers perceive.

9.3.1.1.15 Challenges facing producers

The challenges mentioned by producers were classified into a number of categories. Dominated strongly by the first two topics, the top ten were:

1. Climate (49%)
2. Financial (46%)
3. Regulations (12%)
4. Technological changes (11%)
5. Production variability (9%)
6. Time management (9%)
7. Decision making (8%)
8. Marketing (6%)
9. Finding labour (6%)
10. Managing risk (2%)

Other challenges included: succession, motivation and mechanics (all mentioned by only 1% of producers).

A number commented specifically on the challenge of drought:

> *Dealing w seasonal variability - being on track and then being blown off course entirely by drought*
>
> *Surviving long drought. Planning is very difficult*
>
> *Drought - how to budget for drought*

Other financial challenges mentioned included:

> *Declining terms of trade/ price-cost squeeze*
>
> *Being price takers not price makers*
>
> *Aus dollar*
>
> *Working out how to be more profitable*
>
> *Price fluctuations due to things outside our control*
>
> *Keeping cost of production down as much as possible with spiraling expenses without compromising operations*
>
> *Getting a decent return for work put in*

As one said:

> *If you've got money you can do anything - machinery, vermin control, infrastructure. Everything is a challenge when cash flow reduced.*

The proportion of producers who mentioned each type of challenge varied across the states (Figure 35). Climate is of particular concern in NSW and Victoria and to a lesser extent, WA. Financial challenges were mentioned most by WA producers while technological changes, decision making and marketing were most commonly mentioned by Victorian producers relative to the other states. Mechanics were only mentioned as a challenge by NSW producers and motivation was only mentioned as a challenge by Tasmanian producers. Tasmanian producers were also most likely to mention regulations as an issue and none mentioned production variability as an issue.

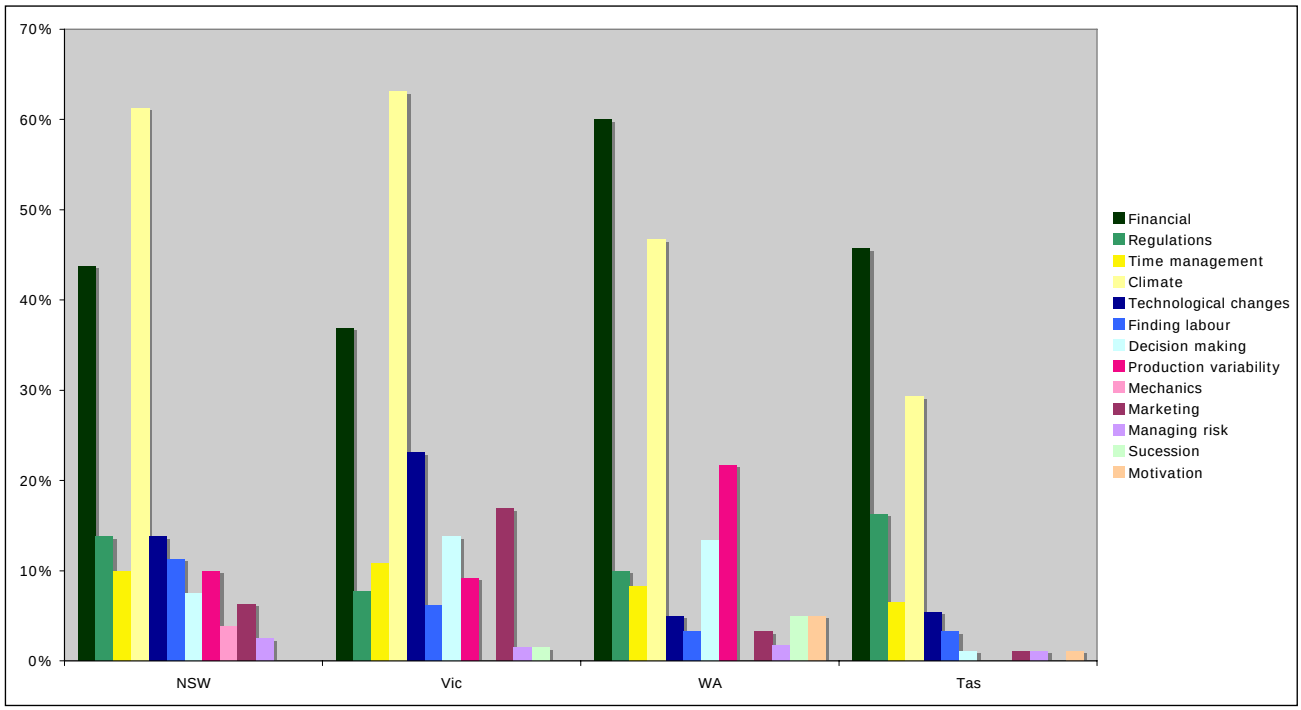


Figure 35 The main challenges being faced by producers according to state

When considered by age groups, it is clear that financial issues and climate are consistently of prime concern regardless of age. Where variation is more apparent is that decision making and marketing are of much greater concern for those under thirty than those in other age groups, while technological changes are of most concern to those over 60, with none under 30 citing this as a challenge (Figure 36).

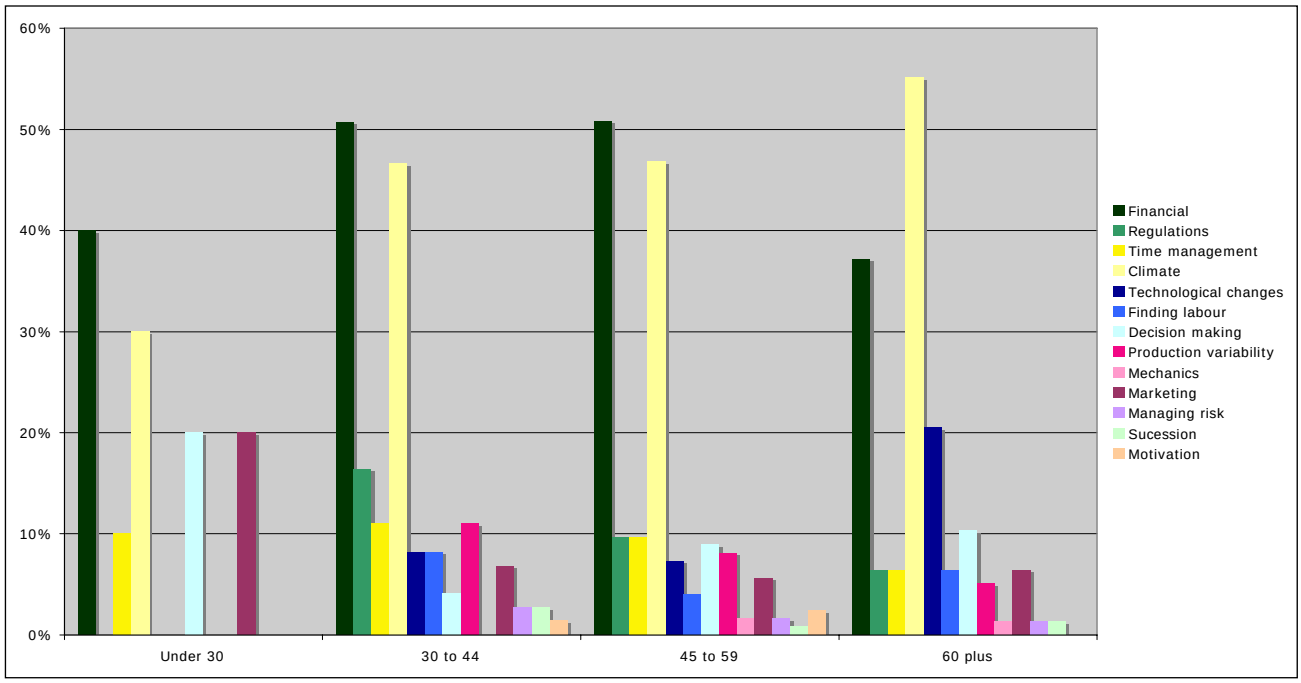


Figure 36 The main challenges being faced by producers by age group

Once again, there is little variation in the proportion of producers who have participated in past training according to the main challenges that they are facing. There is greater variability in relation to the proportion who have definite plans to undertake training in the next six months (Figure 37). In particular, 59% of producers whose main challenge is technological changes have definite plans to undertake training, versus only 30% of producers whose mentioned climate as their main challenge, possibly pointing to producers' assumptions about what challenges training can help with and/or the amount of training that is available on production versus climate change issues. There are also some differences in the proportions planning to undertake training in one to two years. 37% of producers who mentioned "marketing" as a main challenge had definite plans to undertake training in one to two years, compared to only 11% of those producers who mentioned regulations as a main challenge. This may again reflect what challenges training is seen as useful or available for.

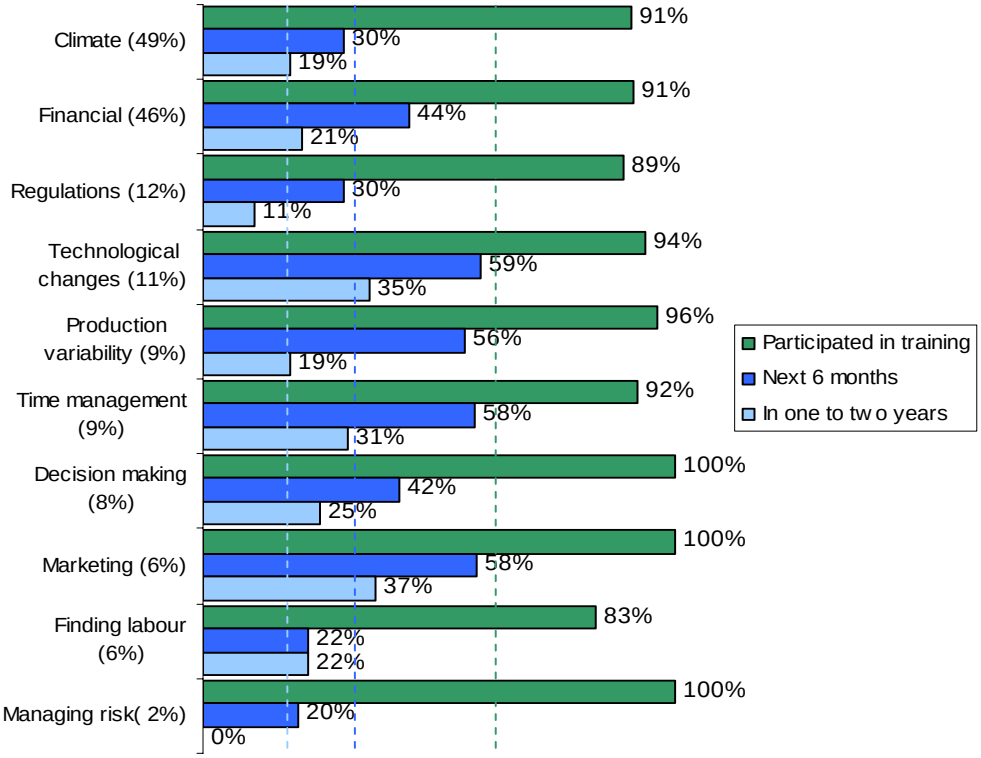


Figure 37 Training participation and intentions according to main farming challenges

9.3.1.1.16Felt learning and training needs

The challenges discussed above do not necessarily equate to the skills gaps or the felt learning needs of producers. Producers were therefore asked what areas they want to improve in. About 1% of producers commented that they would like to improve in all areas. As some stated:

Know a lot but always like to improve

Would like to improve in all areas

About the same proportion commented that they do not feel the need to improve in any area. As one commented:

> *Why change things if they are working?*

Most producers specified particular areas they want to improve in (actively learn about and possibly train in). The areas mentioned were classified into a number of categories. The top ten are listed in order below:

1. Marketing (19%)
2. Financial management (17%)
3. Computers (15%)
4. Animal management (13%)
5. Grazing pasture management (11%)
6. People management (9%)
7. Cropping (8%)
8. Mechanics/technology (7%)
9. Genetics (6%)
10. Environmental management (4%)

It is notable that while producers were relatively united in nominating climate and financial issues as major challenges, the specific areas they want to improve in are more diverse, with no major dominance by a particular topics. The top three topics above reflect the findings of Lingham Foods (2007), which found marketing, business and financial management and computers to be among the main areas crop producers want training in. Other skills mentioned in the present study included: chemical handling; pest control; farm planning; organisation/time management; risk management; and succession.

Across the states, there are some notable differences (Figure 38). A high proportion of NSW producers relative to other states want to improve their skills in farm planning and environmental management, while a notably low proportion feel they need to improve their skills with chemical handling. Victorian producers are most likely to want to improve their computer skills and least likely to want to improve in grazing/pasture management or risk management. Those in WA are most interested in improving their organization and time management and cropping skills, while those in Tasmania are relatively interested in improving their financial management skills but do not feel the need to improve their skills in animal management or farm planning (both 0%).

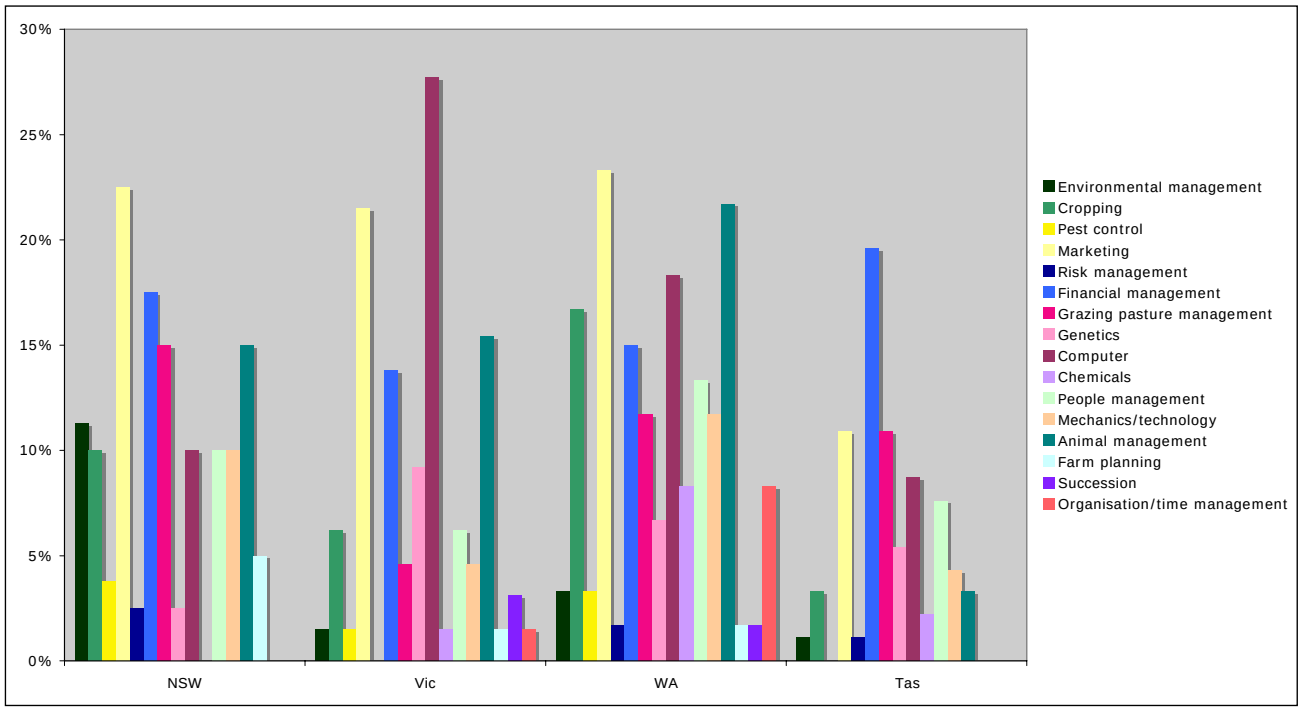


Figure 38 Skills producers want to improve according to state

When the felt learning needs of the various age groups are considered, the most notable difference is that those under 30 and those over 60 reported far fewer skills gaps than those in between. In particular, those under 30 only reported cropping, marketing and financial management as areas they want to improve in.

Analysis across education levels reveals quite substantial differences between the areas that those with education up to year 10 and those with some type of university degree want to improve in (Figure 39). While more of those in the first group cited mechanics/technology as an area for improvement than any other group, financial management is by far the strongest felt need of those who are university trained, relative to other groups and to other skill areas. Surprisingly, perhaps, improved computer skills are wanted by those at all education levels and farm planning was predominantly identified as an area for improvement by those with university training. Those with a moderate level of formal education (year 12 or TAFE equivalent) were most likely to nominate animal management as an area to improve in.

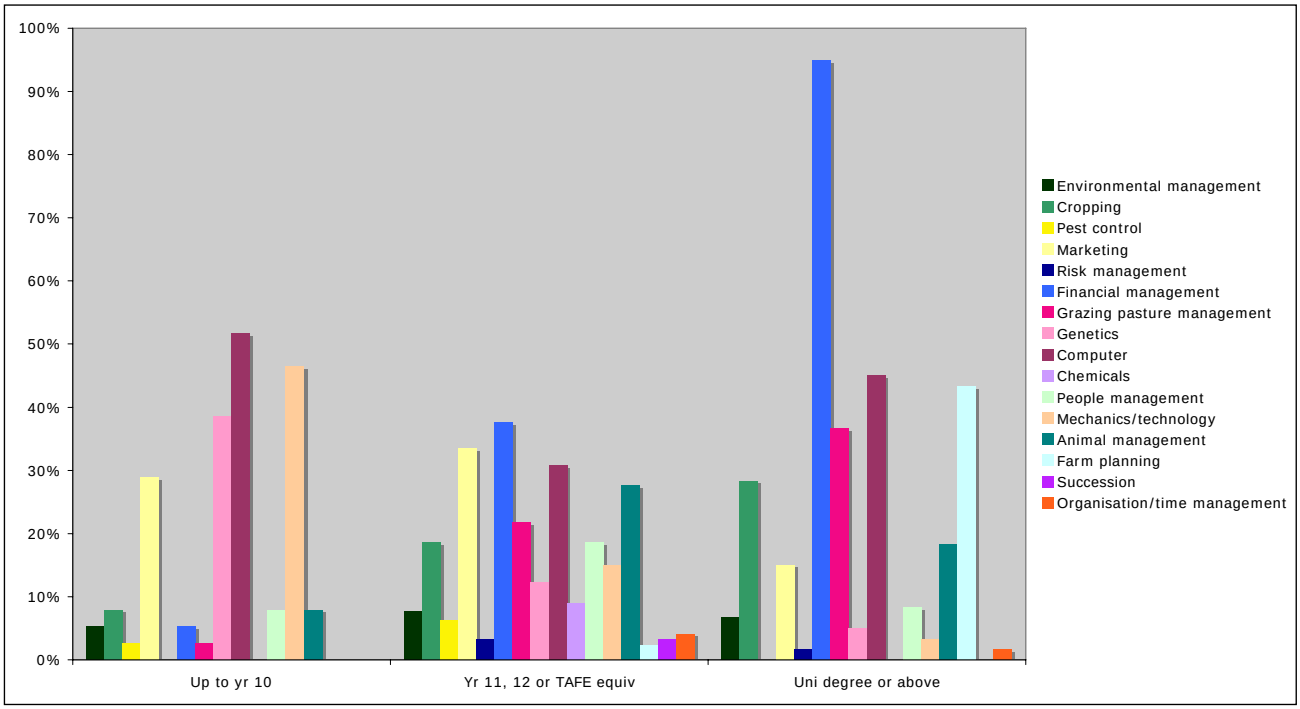


Figure 39 Skills producers want to improve according to education level

Variation across nominated skill areas was analysed according to producers' training history and intentions (Figure 40). The popularity of an area for improvement does not seem to be strongly related to the likelihood that a producer has participated in training in the past or intends on participating in the future.

The combination of the frequency with which topic areas were reported as areas for improvement and the relative interest in future training (notably within the next 6 months) of those who nominated those areas points to the topic areas that producers are most likely to want training in. These are: marketing (with 19% of producers nominating the topic area and 45% of that group intending on training in the next 6 months, equating to 9% of all producers interested in marketing and training); animal management (7% interested in the topic and in training); and cropping (5% interested in the topic and in training). What is most noticeable is that no one topic area emerges as a specific felt training need; the needs are instead diverse.

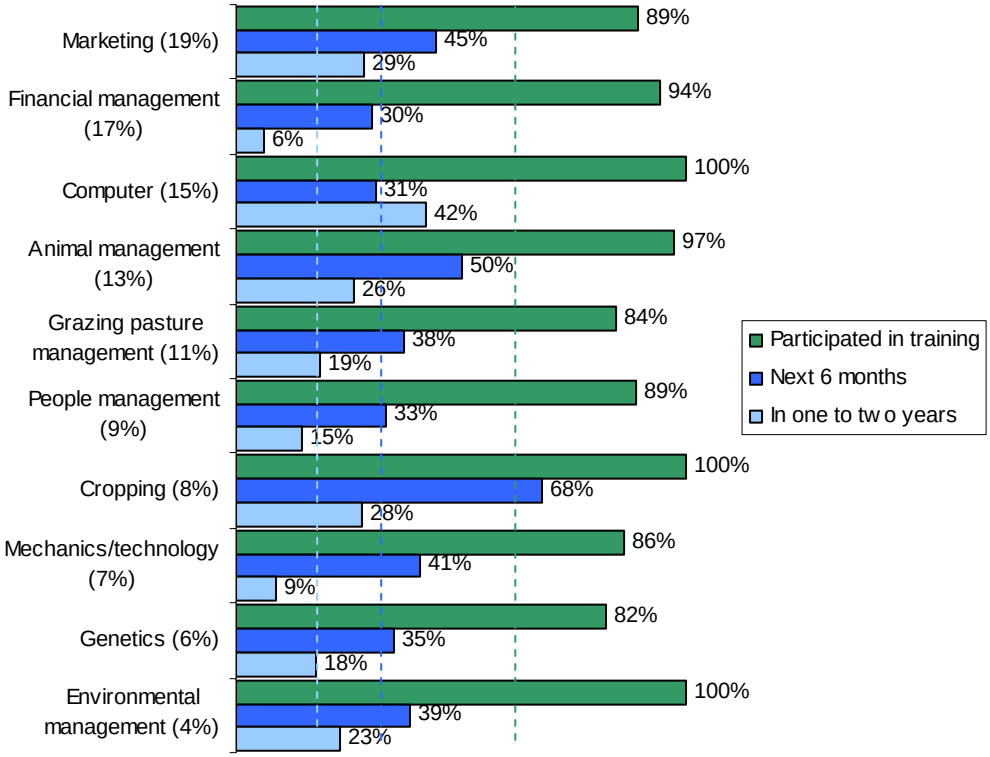


Figure 40 Training participation and intentions according to skills producers want to improve

9.3.1.1.17 Obstacles to improving skills through training

Producers identified a number of key issues or obstacles that had prevented them from attending more training. Consistent with the literature, the barriers mentioned were: time; relevance of training; cost; distance; availability of training; and motivation. Relevance and cost were reported as obstacles by a relatively high proportion of NSW producers, while time and distance were reported by a relatively high proportion of WA producers (Table 17).

Table 17 Reported obstacles to training by state

Obstacle	Whole sample (%)	NSW (%)	Victoria (%)	WA (%)	Tasmania (%)
Time	**73**	**65**	**78**	**83**	**71**
Relevance	**41**	**56**	**44**	**30**	**33**
Cost	**25**	**39**	**27**	**11**	**21**
Distance	**16**	**13**	**25**	**25**	**7**
Availability	**8**	**10**	**3**	**7**	**11**
Motivation	**4**	**6**	**2**	**4**	**4**

These barriers represent both producer-related and training-related factors. The former were also highlighted when producers reflected on what was most difficult about learning new things.

Comments about time frequently referred to producers' and partners' perceived inability to leave work, often because of a lack of alternative labour or childcare:

Not enough time, too busy

Balance between learning and farm work – hard to get away

Need labour to free up time for courses

If had a good full-time workman things would be different

Would have to get contractors in to make time

Sheep work is labour intensive - should be around to help labourers.

Busy all year cutting and delivering chaff - missing a day costs us $2000

Need childcare –even providing DVDs would be a start

Can't go unless creche provided

Haven't attended training for years - find it easier to read publications at night - don't need childcare.

One producer referred to a clash between time spent on felt training needs and time spent on externally perceived training needs:

Most of my training in past was due to regulations – so due to time limitations, other courses take a back seat.

The time it then takes to assess, remember and perhaps implement new things was also emphasised by some respondents:

Need time to assess info

Need to be able to implement it gradually

You can be hindered in learning something and then you lost interest

Takes time to implement new things

Putting changes in place is slow – slows production.

As found by Andrew *et al.* (2005) and Fulton *et al.* (2003), relevance is a key consideration for producers. Comments suggest that what is meant by relevance is, variously, the conciseness, practicalness, timeliness, localness and general usefulness or value of the information that is presented. Many of the concerns about the relevance of training underline that the investment of time and money that training involves for producers means training represents a risk for them:

> *Don't want to pay for a course at the moment, may already have the skills*
>
> *When you attend you don't know what you're going to learn*
>
> *Not sure if speakers will make it worthwhile*
>
> *Need to know travel will be worthwhile*
>
> *Not sure you can trust the info source*
>
> *Believing what they tell you can be hard*
>
> *Going backward so less inclined to participate in activities that do not generate direct income*
>
> *Benefits can be hard to see*
>
> *Being a one-man operation, hard to find time to get away. When times are tough, people don't want to be forking out money, especially if time-wasting.*

Related to this, some producers highlighted the risk that changes in understanding and possible subsequent changes in practice represent for them:

> *You risk getting caught out if you implement something that goes wrong*
>
> *Botching up something new - once done it is money lost - don't like failing*
>
> *Have made mistakes while doing/ learning new things - now much more conservative*
>
> *Have difficulty changing - reluctance to change due to bad past experience*
>
> *You can read all the info but until you try, you don't know if it will work*
>
> *Need to be game to try it out.*

The general difficulty of changing established systems was also a common theme:

> *Hard to change practices from what I have done over the years - reconciling new info with old info and practices*
>
> *Changing your ways and what you have been used to is most difficult*
>
> *The hardest thing is changing the system we already have in place*
>
> *I find the learning bits easy - implementing it, making use of it, is the more challenging part.*

Associated with the difficulty of change are issues of motivation. Some referred to problems with being motivated to learn and try new things:

> *Being committed to learn is hard*
>
> *Going out of comfort zone difficult*

Attitude to change an issue

Getting started the problem

Too pig-headed to start

Conservative background, slow to take up new ideas

Am stuck in ways

Am comfortable with what we have been doing - seems to work.

Others discussed motivation issues more specifically in terms of training. Some who mentioned 'motivation' as an obstacle to training include those who have a general dislike of or scepticism about training (that is, they generally choose not to fulfil their felt learning needs through training):

Don't like training

How much more training do we need? Isn't necessary

Don't enjoy the process

Not a good student

Not enough schooling

Hard to go back to school environment

Fear of ignorance - that you won't understand what they're saying when you go

Frightened, don't want to

Haven't valued it enough to seek out

Never had to do it before

Others are not interested in training in some specific topic areas, whether the topics are ones that they themselves or others think they need to improve in.

Don't like learning about these areas

Will go if needs specific knowledge or improving in one area, but not to all suggested areas

Hard to learn if not interested, needs time and effort

There's a difference between learning because you want to and learning because you have to

Listening to something you don't want to hear a waste of time.

One of the de-motivating factors with learning new things that emerged is the difficulty of working out what information is most important and what to do with it. As some producers stated, what is hardest for them is:

Finding good info among rubbish

Pulling out and applying the key bits

Knowing whether you've interpreted info correctly and determining if info can be successfully applied to MY farm

Understanding what outputs are important and what's not

Often too much info to know what to do with

Too much info to wade through

Getting head around it

Usually more sizzle than sausage.

Retaining and 'implementing' new information – translating training into learning - was also mentioned as a de-motivating factor. This was linked by some to the need for follow-up from one-off training sessions:

Remembering and retaining the knowledge the hardest thing

Using skills enough to remember

Lack of memory my problem

Hard to retain info due to stress, juggling multiple responsibilities

Discipline to follow through with study

Forget to implement

Knowledge retention an issue - need CD/ DVD/ handouts

No follow-up from training

Implementing after only one session is hard

Sometimes need the training a little more often, rather than being hit once.

Other obstacles to training discussed included cost, which most discussed in terms of the hidden costs of attending training and the cost of having all business/family members attend. The rapid pace of change, which makes it difficult to find up to date training and to 'keep up' with what is available, was also mentioned, as was a lack of knowledge of what learning opportunities are available.

Significantly, when discussing why they do not attend more training, some producers (4%) commented that they are more interested in outsourcing their felt knowledge needs than learning, or more specifically, training, to address their skills gaps. As some stated:

Will employ people in areas where own skills are low

I leave some things to specialists

Will upskill staff/ find better staff

Just source skills as needed

Don't see the need to train

Intend to pay for skills in future

Rely on other people to do things/ find info

Don't feel need for it, will pay for someone else's expertise

The info is available on the phone when I need it.

9.3.2 Training Characteristics Influencing Participation

Producer preferences for training content and delivery are presented and summed up in this section.

9.3.2.1 Training content

9.3.2.1.1 Preferences for general types of training content

Producers were asked to rate the importance of various aspects of the *content* of training on a five-point scale where 1 = not important and 5 = very important. For analysis purposes, ratings of 1 or 2 were combined to represent "not important" and ratings of 4 or 5 were combined to represent " very important". A rating of 3 has been defined as "somewhat important".

The following chart shows producers' perceptions of the importance of various types of training program content, such as general principles (theory, frameworks) and technical details (eg. facts and figures) (Figure 41). Their overall importance is greatest in relation to the general principles of the topic (84% rated the importance of this aspect as 4 or 5 out of 5), as found by Roberts (2000), and lowest in relation to case studies (only 68% rated the importance as 4 or 5 out of 5), although local information was ranked lowest in terms of overall level of importance.

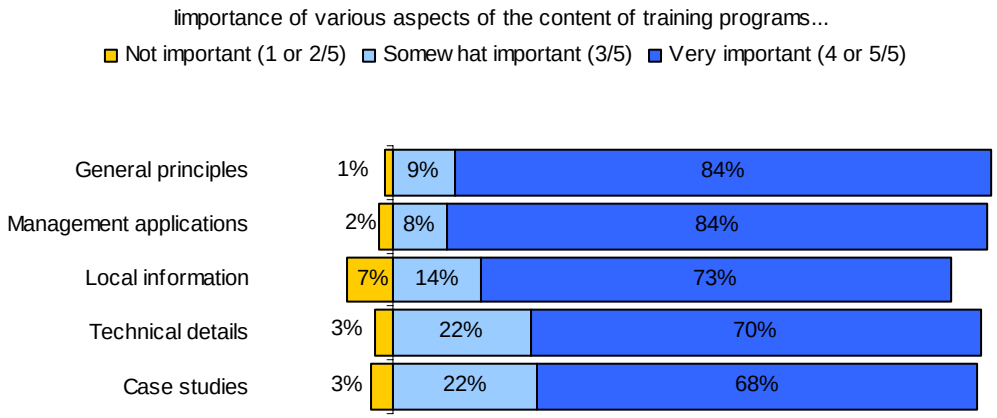


Figure 41 Importance of various types of training content

The following table compares the proportions of producers who have participated in training or have definite plans to do so by the perceptions of the importance of various aspects of the content (Table 18). Notably, those producers who rated the importance of general principles, technical details and management applications as low were relatively less likely to have participated in training or have definite plans to undertake training than those producers who rated these aspects of the content of training as highly important.

Table 18 Comparison of participation in training according to importance of types of content

Training content area	Low level of importance (1 or 2/5)			High level of importance (4 or 5/5)		
	Participated in training	Next 6 months	In one to two years	Participated in training	Next 6 months	In one to two years
General principles	75%	0%	0%	92%	36%	19%
Technical details	78%	22%	11%	92%	33%	18%
Management applications	71%	14%	0%	93%	36%	20%
Case studies	90%	0%	0%	93%	39%	17%
Local information	91%	14%	5%	91%	36%	21%

The importance of different areas of training content was also analysed by the various demographic segments to determine whether there were any significant differences between the segments (Table 19). Note that the focus of this analysis is differences in the proportions of producers who rated each aspect as either 4 or 5 out of five on the importance scale.

Table 19 Variation in perceived importance of learning across different types of content

Producers who considered the following to be very important, by…	Greatest importance (Top 3 – most important)	Least importance (Bottom 3 – most important)
General principles	1. Postgraduate degree (100% very important) 2. 60 plus (93%) 2. More than 2500 ha (93%)	1. 201 to 600 ha (74%) 2. Aged under 30 (78%) 3. Less than 200 ha (79%)
Technical details	1. Postgraduate degree (100%) 2. 1200 to 2500 ha (80%) 3. Victoria (80%)	1. NSW (63%) 2. 201 to 600 ha (66%) and 601 to 1200 ha (66%) 3. Aged 30 to 44 (67%) 3. Completed Year 11 or 12 (67%)
Management applications	1. Postgraduate degree (100%) 2. Aged under 30 (100%) 3. University degree (95%)	1. Completed up to Yr 10 (80%) 1. 201 to 600 ha (80%) 2. More than 2500 ha (83%) 2. NSW (83%)
Case studies	1. Under 30 (89%) 2. Postgraduate degree (80%) 3. More than 2500 ha (80%)	1. 1200 to 2500 ha (57%) 2. 60 plus (66%) 3. Completed up to Yr 10 (66%)
Local information	1. Completed up to Yr 10 (91%) 2. Victoria (89%) 3. Less than 200 ha (83%)	1. TAFE or equivalent (69%) 2. NSW (67%) 3. Postgraduate degree (60%)

We can see that those with postgraduate degrees consider all types of training content to be very important except for local information. These preferences are just about the opposite of those who have education to a year 10 or year 12 level. In terms of age, those over 60 expressed a preference for general principles over case studies, while those under 30 expressed a preference for management applications over general principles. This may reflect the breadth of experience – of 'case studies' – that those over 60 feel they already have, and the hunger to get on and apply knowledge among young producers who may have recently had their fill of general principles at school and/or university.

Among the 34% of producers who had definite plans to undertake training in the next six months and the 18% who had definite plans in one to two years, the most important aspects of the content were management applications (90% and 92% respectively) and general principles (89%) (Figure 42).

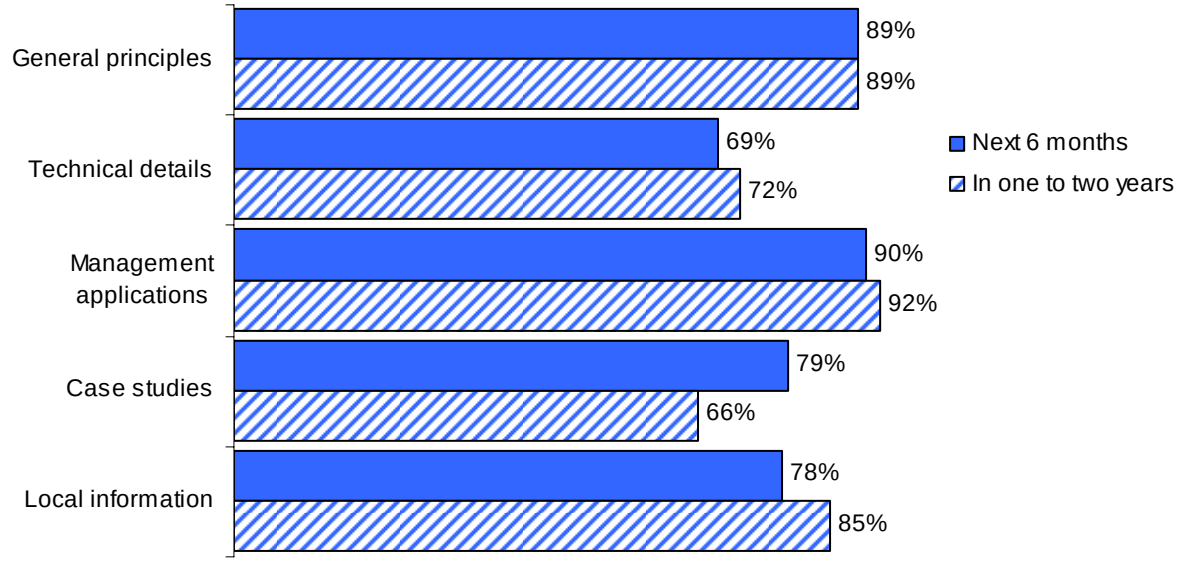


Figure 42 Training intentions by importance of type of content area

An issue related to the above which emerged in the open-ended questions about training preferences is the importance and difficulty of catering for different pre-existing skill levels. Some producers requested that training be made more challenging and that new topic areas be developed, while others highlighted that background knowledge should not be over-estimated and that some training content was too academic and technical. One interviewee noted that the latter problem is sometimes gendered:

> *Presenters must take into account and cater for difference experience/ knowledge levels eg between new and older farmers/ farm wives. They must also be aware that some women play a major role on the farm and are there to learn and should be shown as much attention and respect as male participants.*

9.3.2.1.2 Specific topics of past training

Among those producers who had participated in training, the most frequently mentioned topic areas they had participated in were:

- Chemicals (reported by 33% of surveyed producers)
- Wool industry (28%)
- Grazing/ pasture (27%)
- Livestock (26%)
- Business and financial (20%)
- Whole farm planning (12%)
- Mechanics (11%)
- Cropping (10%)
- Occupational health and safety (10%)
- Computers (8%)
- Nutrition (8%)
- Soil (7%)
- Marketing (7%)
- Quality assurance (6%)
- Regulations (6%)
- Environmental management (6%)
- Genetics (5%)

When specific topic areas were considered, some notable differences between producer segments in relation to the key topic areas covered were found (Table 20). The main differences are by state and to some extent farm size. Again, the differences by enterprise type were relatively small.

Table 20 Variation in topics of past training by demographic segment

Producers who participated in professional development, by…	Segment	Top three topic areas
State	• NSW	• Grazing/pasture (55%) • Chemicals (34%) • Wool industry (34%)
	• Victoria	• Chemicals (60%) • Livestock (40%) • Wool industry (37)%
	• WA	• Livestock (50%) • Wool industry (37%) • Chemicals (33%)
	• Tasmania	• Grazing/pasture (25%) • Business and financial (16%) • Whole farm planning (13%)

Farm size	• Up to 200 hectares	• Grazing/pasture (30%) • Computers (18%) • Business and financial (13%)
	• 201 to 600 hectares	• Grazing/pasture (30%) • Computers (18%) • Business and financial (13%)
	• 601 to 1200 hectares	• Grazing/ pasture (49%) • Chemicals (47%) • Wool industry (43%)
	• 1201 to 2500 hectares	• Chemicals (38%) • Livestock (33%) • Wool industry (30%) • Business and financial (30%)
	• More than 2500 hectares	• Livestock (36%) • Chemicals (30%) • Wool industry (18%)
Enterprise	• Lamb	• Chemicals (33%) • Wool industry (30%) • Livestock (30%)
	• Wool	• Wool industry (36%) • Chemicals (34%) • Grazing/pasture (29%)
	• Beef	• Chemicals (32%) • Grazing/pasture (28%) • Wool industry (25%) • Livestock (25%)
	• Grain	• Chemicals (37%) • Grazing/pasture (33%) • Livestock (33%)

There does not appear to be any association between topics of past training and intentions to attend more training (Figure 36). For example, 33% of producers had participated in training related to chemicals, and 45% of these people have definite plans to undertake training in the future in a range of topic areas; only 6% of producers have undertaken training in environmental management, but again 45% have definite plans to undertake training in the future in a range of topic areas.

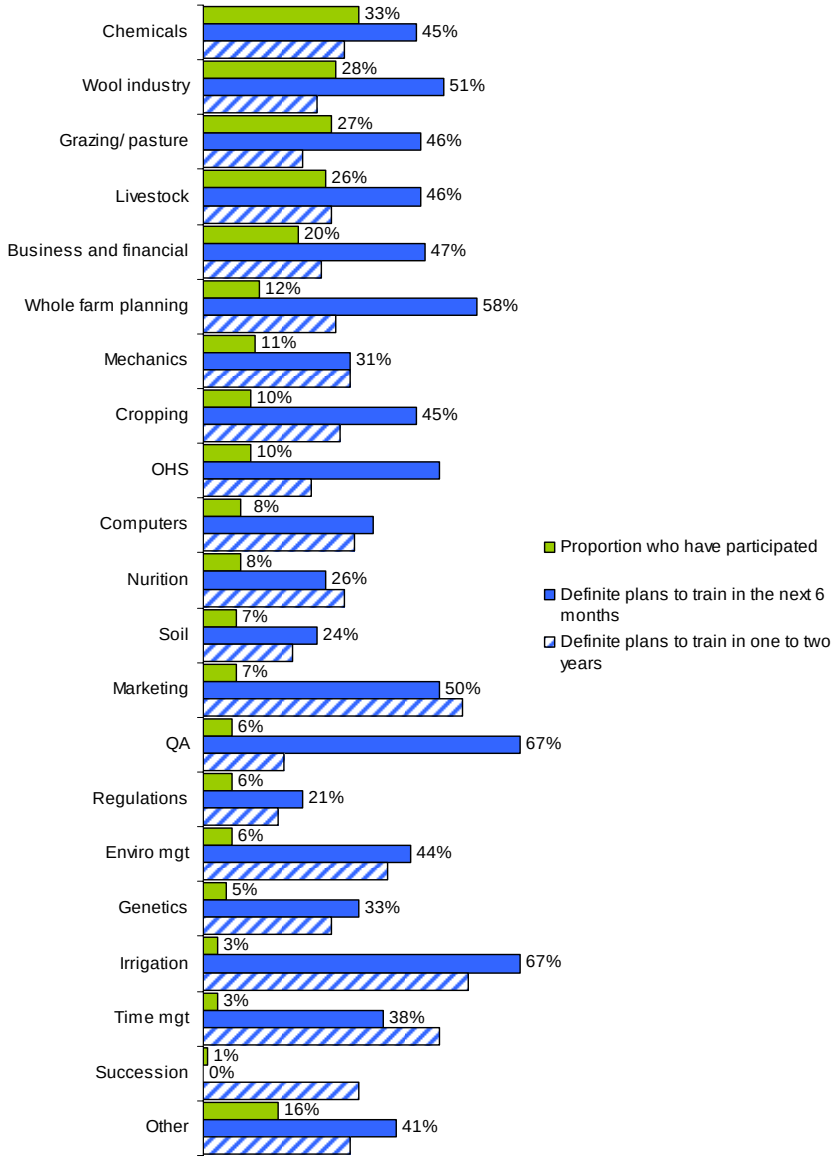


Figure 43 Training participation and intentions by topic area of past training

9.3.2.2 Training delivery

9.3.2.2.1 Preferences for specific delivery methods

Producers were asked to rate the importance of various aspects of the *delivery* of training on a five-point scale where 1 = not important and 5 = very important (Figure 44). For analysis purposes, ratings of 1 or 2 were combined to represent "not important" and ratings of 4 or 5 were combined to represent " very important". A rating of 3 has been defined as "somewhat important".

Small group discussions and demonstration sites were reported as most important in terms of the way training is presented, while structured seminars were rated least important. Note that workshops often incorporate elements of many of these methods, notably structured seminars and small group discussions.

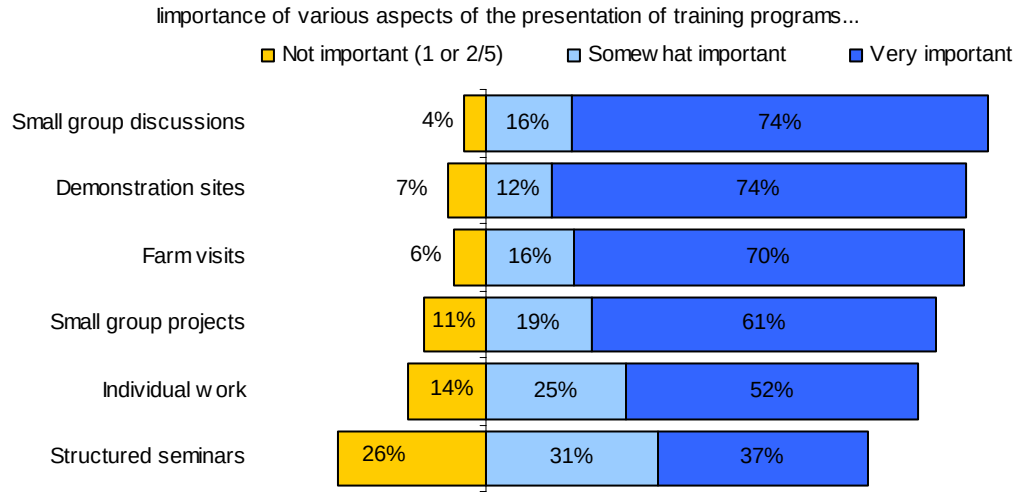


Figure 44 Reported value of various presentation formats

The following table compares the proportions of producers who have participated in training or have definite plans to do so by the perceptions of the importance of different presentation formats (Table 21). Generally there were only small differences between producers who rated the importance of most presentation formats as low and those who rated them as high. The exception is farm visits: only 65% who rated this presentation format as low importance had participated in training compared to 95% who rated farms visits highly. It is also notable that those producers who rated various aspects of the presentation format as highly important were more likely to have definite training plans in the next 6 months or the next one to two years.

Table 21 Training participation according to importance of presentation format

	Low level of importance (1 or 2/5)			High level of importance (4 or 5/5)		
Presentation style…	**Participated in training**	**Next 6 months**	**In one to two years**	**Participated in training**	**Next 6 months**	**In one to two years**
Structured seminars	87%	36%	27%	95%	38%	18%
Small group discussions	91%	0%	0%	93%	39%	21%
Small group projects	91%	27%	18%	91%	37%	21%
Farm visits	65%	12%	12%	95%	38%	24%
Demonstration sites	75%	20%	0%	93%	39%	24%
Individual work	85%	41%	17%	92%	32%	21%

Producers were also asked to consider their interest in "training that is delivered on-line with some interaction with a facilitator". Overall 34% of producers indicated that they would be interested in e-learning and 62% were not interested (Figure 45). The balance were unsure or did not respond to this question. The relatively high level of disinterest may reflect producers' belief that e-learning does not provide the kind of interaction that most indicated above they prefer in training experiences. Others commented that, as found in previous research, they do not like working on computers (particularly in the evenings when they are tired) and/or they have poor internet access.

The higher the level of education among producers, the greater the interest in e-learning (13% of those with only Year 7 to 10 education compared to 60% of those with a post graduate qualification). In addition, younger producers were generally more interested in e-learning than older producers (50% of producers aged under 30 compared to 28% of producers aged 45 to 59), as expected. It is notable that producers with smaller farms were generally more interested in e-learning than large scale producers.

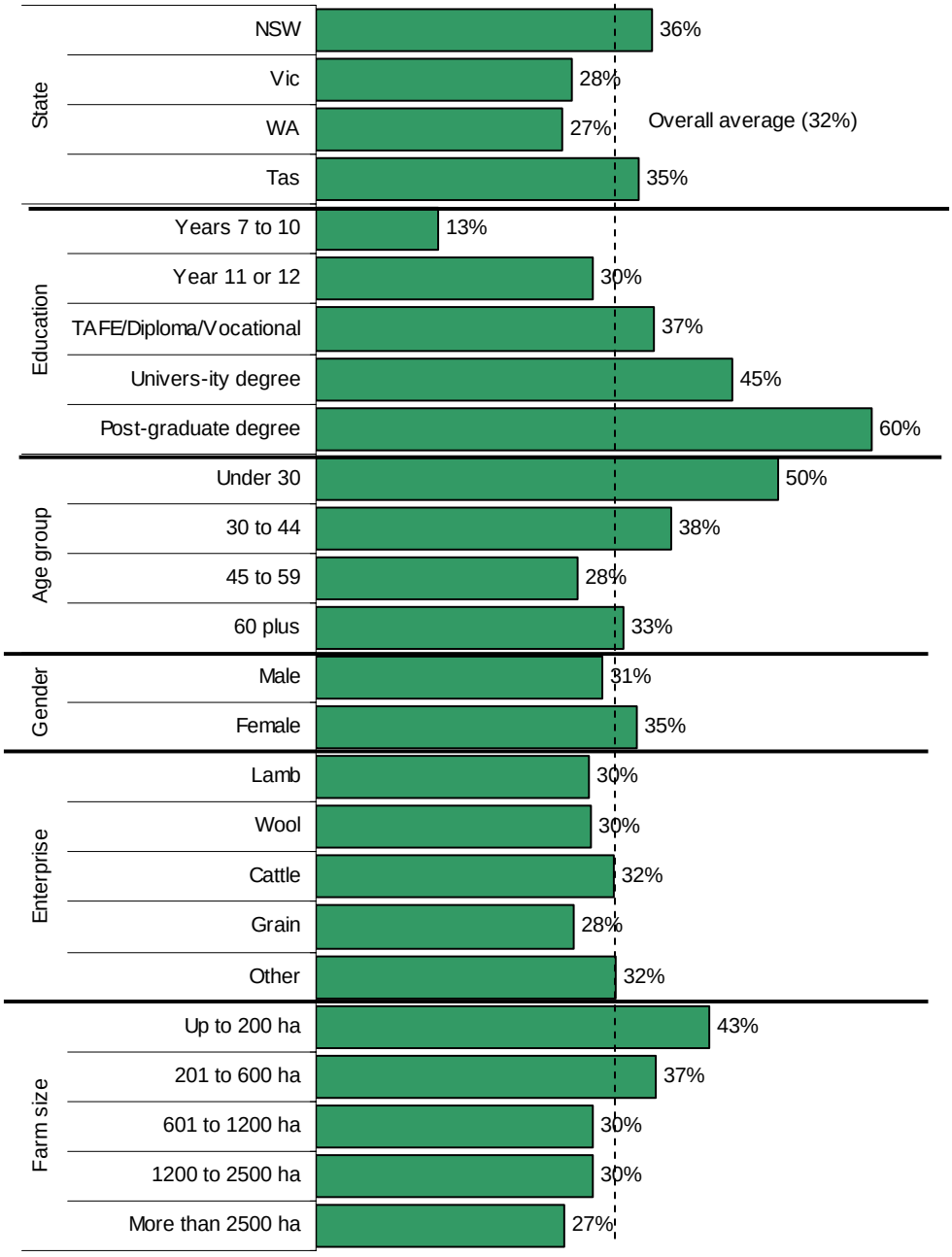


Figure 45 Interest in e-learning by demographic segment

9.3.2.2.2 Delivery methods of past training

Producers were asked to indicate the delivery mode of the training they have participated in in the past. The main methods mentioned included:

- Workshops (52%)
- Seminars (41%)
- Field days (33%)
- Discussion groups (26%)
- Practical/ on farm sessions (15%).

Only 2% of producers had participated in on-line training and 2% had participated in one-on-one sessions.

These results were analysed by the likelihood of participating in training in the future (Figure 46). The following chart shows the differences in the proportions of producers who had definite plans for training in the next six months or in the next one to two years the methods according to the methods of delivery of training that they had previously participated in. In general the proportions of producers did not vary greatly, except for the small proportions of producers who have participated in one-to-one, on-line or TV link-up training in the past, where the small number of individuals involved means results can not be taken as representative.

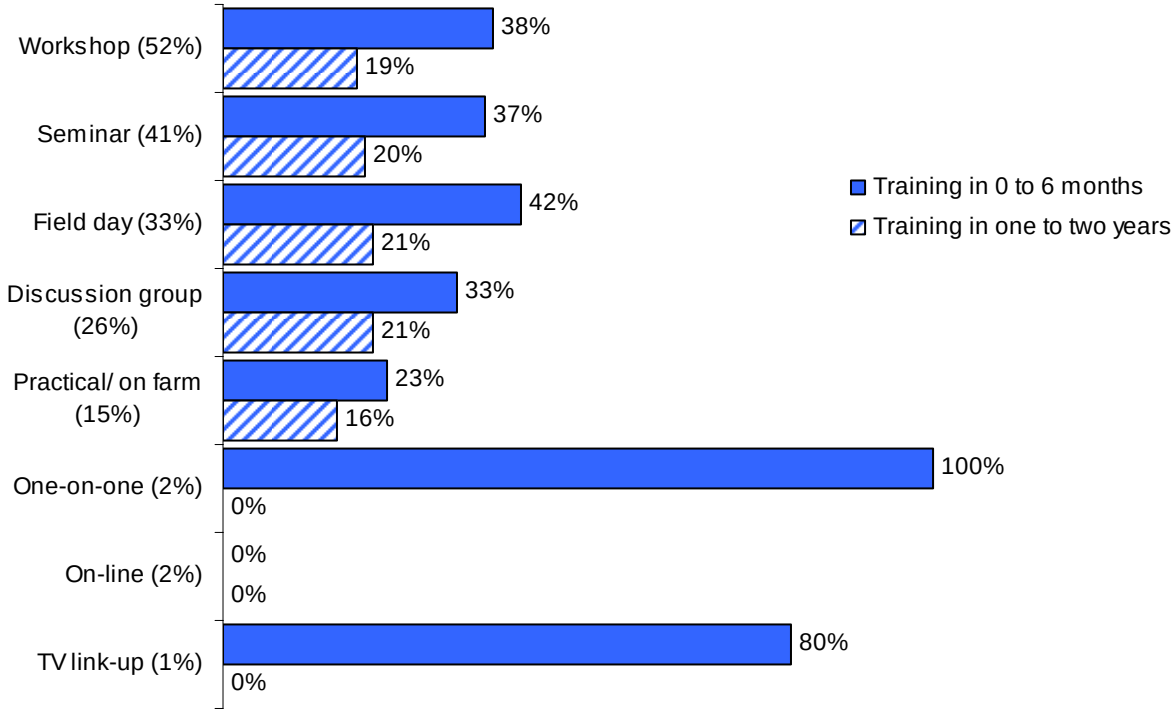


Figure 46 Training intentions by delivery method of past training

9.3.2.2.3 Suggestions for improving training

When asked to summarise what would make training more appealing, producers provided a variety of suggestions. The key themes were:

- Improve the content (28%)
- Make sessions more time-efficient (21%)
- Run sessions closer to the farm (16%)
- Provide better trainers (11%)
- Reduce the cost (10%)
- Better timing (8%)
- Publicise training more widely (5%).

The key differences for the top five suggestions to improve training among producer segments are summarised in the table below (Table 22). Those with moderately large farms (1200 to 2500ha) typically expressed a particular preference for making training more time-efficient, geographically close and cheaper. Western Australians were relatively concerned about the quality of the training content and time-efficiency of the sessions, but unconcerned about cost. Postgraduates also expressed more concern about the quality of the content and less concern about cost. Conversely, those with a year 7 to 10 education were generally more concerned about cost than content.

Table 22 Top five suggestions for how to improve training by demographic segments

Top five suggestions to improve training	Most mentions	Least mentions
1. Improve the content (28%)	1. Aged under 30 (50%) 2. Western Australians (43%) 3. Post-graduate degree (40%)	1. Up to 200 ha (13%) 2. Years 7 to 10 (18%) 3. Tasmania (19%)
2. Make sessions more time-efficient (21%)	1. 1200 to 2500 ha (30%) 2. Western Australians (28%) 3. Aged 30 to 44 (26%)	1. Post-graduate degree (0%) 2. Aged 60 plus (13%) 3. Up to 200 ha (15%)
3. Run sessions closer to the farm (16%)	1. TAFE/Diploma/Vocational (28%) 2. 201 to 600 ha (28%) 3. 1200 to 2500 ha (23%) 3. Victorians (23%) 3. 60 plus (23%)	1. 601 to 1200 ha (8%) 2. More than 2500 ha (9%) 3. Under 30 (10%) 3. University degree (10%) 3. Aged 30 to 44 (10%)
4. Provide better trainers (11%)	1. NSW (24%) 2. University degree (20%) 3. 201 to 600 ha (18%)	1. Post-graduate degree (0%) 2. Up to 200 ha (0%) 3. Tasmanians (2%)
5. Reduce the cost (10%)	1. Aged under 30 (20%) 2. 1200 to 2500 ha (20%) 3. Years 7 to 10 (18%) 3. 30 to 44 (18%)	1. Post-graduate degree (0%) 2. Western Australians (3%) 3. Aged 45 to 59 (7%)

The suggestions above highlight that aspects of delivery other than the actual delivery method are of importance to producers. Strong and often diverse opinions were expressed about the timing and location of training and the size and homogeneity of groups of participants. As seen in the table above, timing issues include the time-efficiency of how training is presented. As some producers remarked:

> *Too many presenters waffle on and waste time to deliver minimal information, often overestimate their importance and fail to just get on with it.*
>
> *Stick to the program - there's too much digressing and in the end you run out of time.*
>
> *Keep it straight to the point!*

Timing issues also include the length of training sessions, their regularity and the time of day and year at which they are held. Some people expressed a preference for one-off intensive sessions while others requested multiple or regular sessions of only a few hours duration. Some emphasised that mornings or business hours are best for them while others stated that evenings are the only time they can attend training. In terms of season, some proposed that training is best held in summer when heat makes farm work difficult, while others suggested that winter is the ideal quiet time to hold training activities.

Associated with timing issues is that of the distance producers need to travel to attend training. While most emphasised that the nearer the training activity the easier it is for them to attend because of the time and cost involved in travel (as seen in the table above), some suggested that giving people an excuse to get away and have a ‘holiday’ was appealing.

In terms of the number of people involved in any one training activity, producers were fairly united in demonstrating a preference for small groups, but varied in whether a ‘small’ group entailed 5 or 30 producers. Producers also differed over whether it was better to have ‘like minded’ or diverse producers as their co-participants at a training event.

Some verbatim producer comments about these issues are presented below to provide a sense of the responses:

> *Short morning sessions*
>
> *Mornings, 2-3hrs max, short and sharp, meal afterwards*
>
> *Nothing before 10.30am so can work beforehand*
>
> *1/2 day, specific, concise*
>
> *1/2 day, local, don’t cram in too much*
>
> *1/2 day in morning, breakfast meeting*
>
> *6-7hrs max*
>
> *1 day max, even if a long day*
>
> *Nights only*
>
> *Late afternoon/ night*
>
> *Food and coffee, during the evening*
>
> *Food and coffee, during the day*

2 days max, with farmers of diverse as well as similar backgrounds

Once a week for 6 wks during off season to get good understanding, 10-20 people

One day per month or on a regular basis

Needs to be regular, something every couple of months face to face

Don't let if interrupt farm life, short, sharp and focused, modules are good

Local, daytime, limit on size of class, good sound, not time wasting, don't need break

Younger people, about 30 people

Local, people with similar interests, no more than 10 people, flexble times (not April-June, Oct-Dec)

Small group of local, like-minded farmers.

The group should have 'like' skills

Small diverse group with diverse ages and businesses types

Need more courses in winter when we're not so busy

Hold it somewhere interesting so people can make a holiday of it

Have the training on a tropical island, make it fun and hot - serious!

In keeping with the preference many expressed for practical training and small groups, 'interaction' was also highlighted as an important aspect of training, both in terms of participant interaction with the topic and presenter, and with each other. As some commented:

Important to be able to see and have a crack yourself

Depends on topic but practical topics should involve hands on work

Co-operative learning and teaching the best - opportunity to share w peers what we have learnt.

Interaction, idea sharing needed - people bring a variety of skills and attributes that others can learn and benefit from

Needs to be interactive - talk with speaker and amongst selves

Group size needs to be kept small so that you have a high level of interaction and discussion with other farmers/ key persons/ industry

Discussion with presenter and other farmers essential.

In addition to highlighting the importance of an interactive learning approach within a training activity, some producers also emphasized the broader social interaction a training event can entail. Although as we saw above some producers' concern with time efficiency means they are after very focused events, others value the broader social benefits training can involve. In keeping with comments above about food and meals, some stated:

Social aspect important

Incorporate social side

Group is good because social interaction

Good to interact socially.

In keeping with the desire for training to be conducted in a more interactive and social vein, some producers mentioned that more personal invitations to training events would increase their awareness, interest and commitment, as found by Nicholson et al (2003) in the Sustainable Grazing Systems Program.

Some of the overall comments producers supplied at the end of the interview about their training preferences incorporated specific feedback about MLA and its training provision. These are provided verbatim in Appendix 6.

9.3.3 Specific MLA Training Proposals

9.3.3.1 Overview

MLA is considering running several courses covering the following topics:

- Costs of production (via a two-day workshop with a follow-up day twelve months later);
- Crop to livestock transition (only in Victoria and Western Australia, via a 2 day workshop); and
- Sheep nutrition (only in NSW, via a 2 day workshop with a follow-up day twelve months later).

Relevant producers were asked to indicate their level of knowledge of, interest in and interest in developing their understanding of each topic. They were also asked what their preferred delivery method for training in each topic would be and how interested they are in MLA's proposed delivery formats. The results were analysed overall and by the various demographic segments, farm plans and the decisions producers are facing.

9.3.3.2 Cost of production training

As shown below there is a relatively high level of interest in the topic of Cost of Production with 75% of producers rating their interest as either 4 or 5 out of 5 (Figure 47). While only 54% indicated that they already have a high level of understanding of the topic (i.e. they rated their understanding as four or five out of five), 69% indicated that they would like to develop a better understanding of the topic.

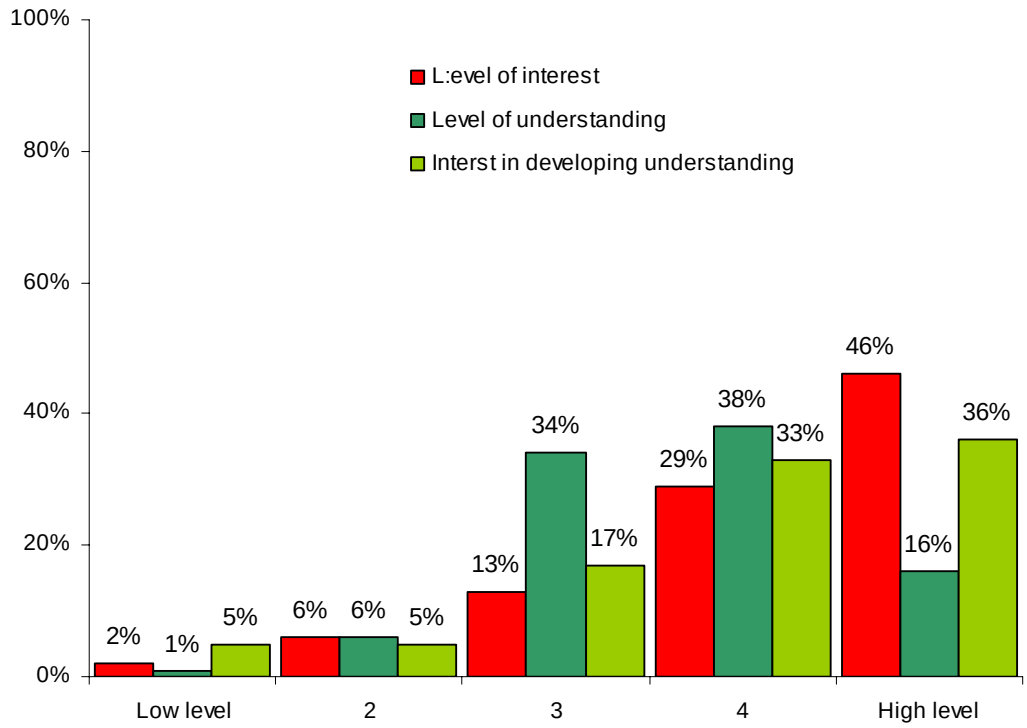


Figure 47 Level of interest in, understanding of and interest in developing understanding in Cost of Production

The differences by demographic segments are shown below (Figure 48). The variation between segments - apart from the lack of interest among those with a post graduate degree and those in Tasmania - is relatively small.

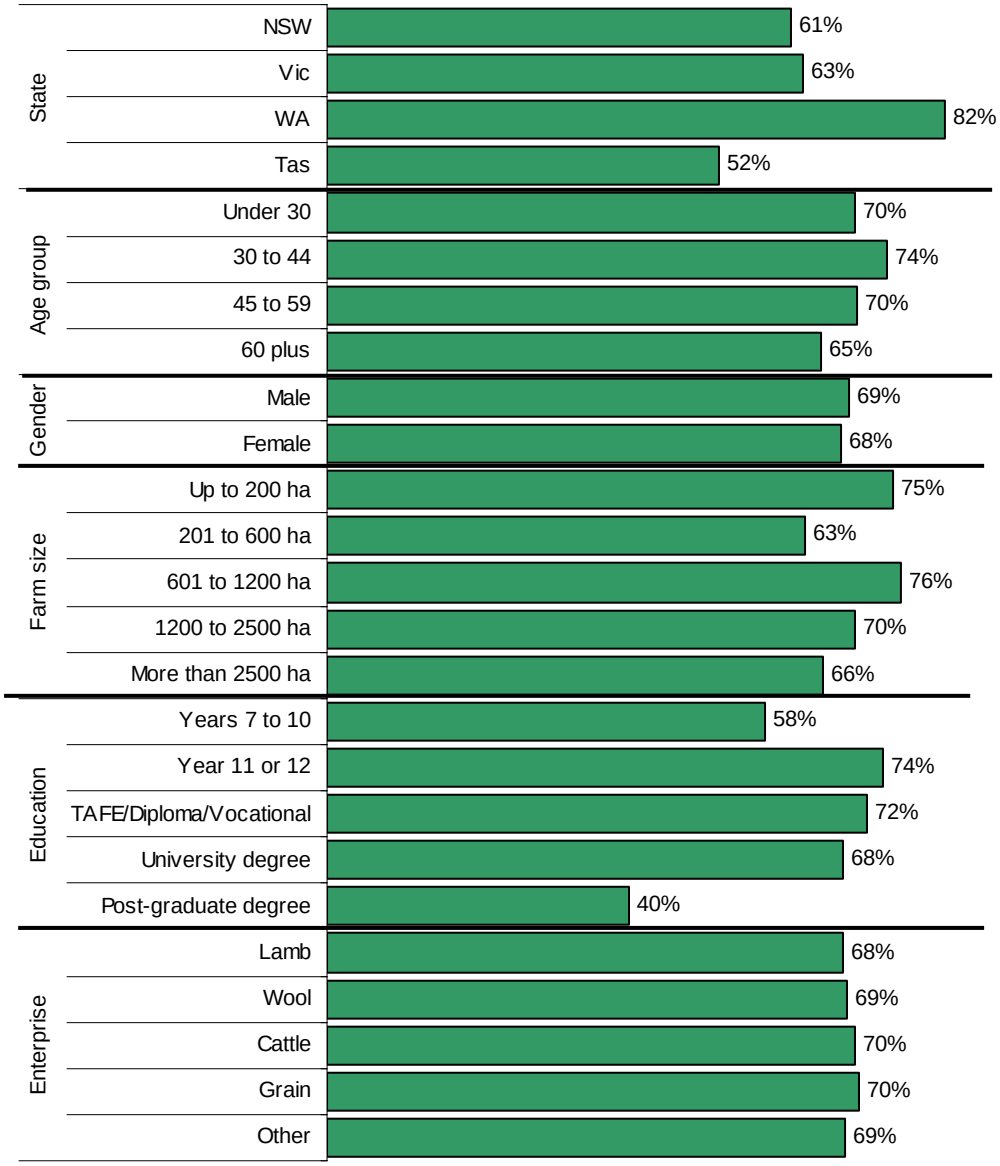


Figure 48 Interest in developing a better understanding of Cost of Production by demographic segment

The main reasons that the producers uninterested in developing their understanding of the topic further gave for not wanting to devote time and other resources to such a task were that:

- They have a prior understanding of the topic;
- They don't see the topic as important; or
- They don't personally need to understand the topic.

In terms of the latter, some commented that they did not need to understand the topic in depth because they outsource expertise on it. As some stated:

Have advisor for this

Currently consultant does CoP for business

Have consultant support for this.

While 69% of producers indicated they would like to develop a better understanding of Cost of Production, only 56% reported that they would like to actually participate in training about it. The reasons for this drop in interest are that some prefer to learn about it in other ways, such as through their own research or talking one-on-one to an advisor about it. Others maintained general concerns about the value of training or voiced concerns about training in this specific (type of) topic:

> *Don't need to spend the time and money*
>
> *There can be a discrepancy between what the course says and the reality.*
>
> *If only had sheep on the farm it would be important, but on a mixed farm there are too many variables and details. How would this be covered?*
>
> *There are probably no magic solutions for something like this so outcomes are likely to be predictable.*
>
> *Computer stuff like this is a big turn off.*
>
> *Prefer info days with multiple topics, not single topics like this.*
>
> *I would be more interested if I was doing the actual books, but just do it in my head.*
>
> *If it were personalised – ie opportunity to work on their business - I would be interested, but not interested in just hypotheticals.*

Those who expressed a high level of interest in training in Cost of Production provided three main reasons for their interest:

- The value of the topic;
- A specific interest in aspects of or application of the topic;
- The general value of training.

These are listed below along with some of the comments received about it:

- The value of the topic

  > *It's a key business driver*
  >
  > *Very relevant to profitability*
  >
  > *Critical area – basis of whether farm sinks or swims*
  >
  > *We need to know it to make money so we can stay on the farm*
  >
  > *Yes, interested, because nothing is currently working in terms of making ends meet*
  >
  > *It's important in order to run a tight ship*

- Specific interest in aspects of or application of the topic

Want to understand what causes fluctuations in CoP

Need to put value on water, supplementary feeding etc

Want to compare CoP with others locally

With feedlot – need to watch hidden costs

Need to improve in this area – we tend to run cattle because we like them but what is is costing?

Want to see if new products in industry are viable

Want to realise my limitation to improve

- The general value of training.

You have to keep up – 'he who hesitates is lost'

Always more to learn

Things are getting tougher and it's necessary to change with the times

Need to make sure we're right

Anything to help the profit margin

Want peace of mind, to make sure we're doing things right.

The preferred methods of delivery nominated by those interested in Cost of Production training were:

- Discussion group (nominated by 27% of producers)
- Workshop (22%)
- Seminar (14%)
- Practical on-farm training (10%)
- One-on-one training (5%)
- Online (5%)
- Field day (1%).

51% were interested in the delivery method proposed by MLA: a two day workshop with a follow-up day 12 months later. Interest in this delivery method was greatest among:

- Producers with less than 200 hectares (75% of producers in this category)
- Producers with university degrees (63%); and
- Producers aged 30 to 44 years (60%).

In contrast, interest was lowest among producers with more than 2,500 hectares (only 37% were interested in this format), although as seen above 66% of this group are interested in developing their knowledge of the topic further (Figure 48).

Among the 51% of producers who were generally interested in the proposed delivery method, 79% were interested in having a small group discussion session as the follow up day and 40%

were interested in a one-on-one session with a facilitator as the follow up. 42% indicated that 12 months was too long to wait for a follow-up session.

9.3.3.3 State-specific training

9.3.3.3.1 The crop to livestock transition

Among the WA and Victorian producers who questions on The Crop to Livestock Transition were directed at, there was a relatively moderate level of interest in the topic. 55% of producers rated their interest as either 4 or 5 out of 5 (Figure 49). 63% indicated that they already have a high level of understanding of the topic (either 4 or 5 out of 5) and 48% indicated that they are highly interested in developing their understanding further.

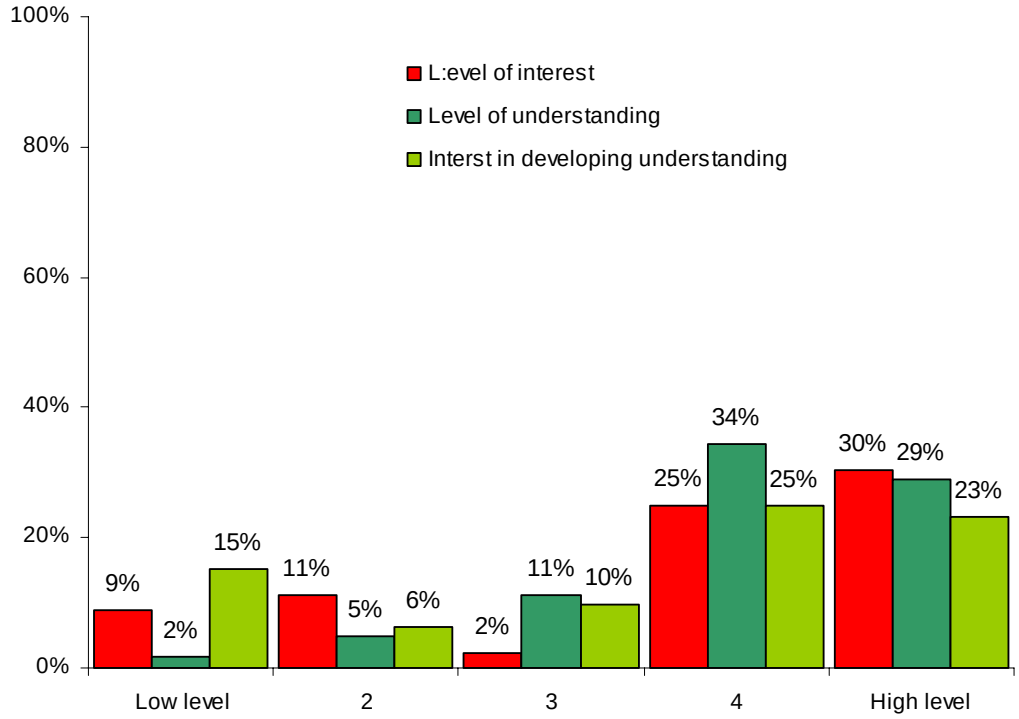


Figure 49 Level of interest in, understanding of and interest in developing understanding in The Crop to Livestock Transition among Western Australian and Victorian producers

When producers' interest in developing a better understanding of the topic is considered, the proportion of interested producers is revealed as much greater among Victorian producers (74%) than WA producers (35%) (Figure 50). In contrast, the differences between enterprise type are very small.

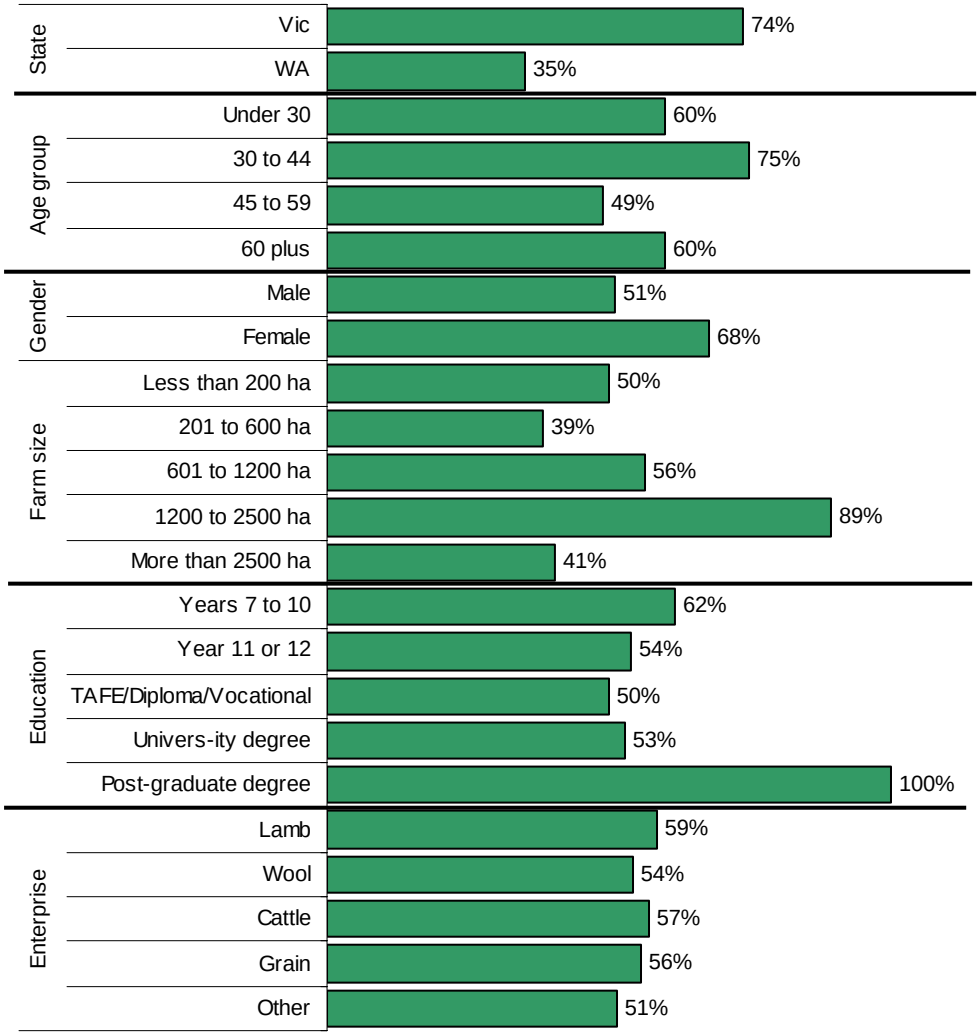


Figure 50 Interest in developing a better understanding of The Crop to Livestock Transition by demographic segments

Producers' interest in increasing their understanding of The Crop to Livestock Transition also varies considerably according to producers' plans for their farm over the next five years. Greatest interest in training in this area is among producers who have plans to consolidate their farming, whilst those planning to sell their farm were much less likely to be interested.

Producers' interest in improving their understanding of The Crop to Livestock Transition also varies according to the decisions that they are facing. Producers facing decisions related to the drought/climate were more interested in improving their understanding of The Crop to Livestock Transition (i.e. they rated their interest as four or five out of five), compared to producers who were facing decisions to improve their property.

Overall, 50% of producers were interested in participating in formal training to learn more about the crop to livestock transition (69% of Victorian producers compared to 28% of WA producers). There was little variation by farm enterprise.

The general training preferences discussed in Sections 4.2.2.1 and 4.2.3 suggest that the proposed delivery format of a two day workshop needs to include significant elements of group discussion, demonstration sites and farm visits to satisfy the range of participants.

9.3.3.3.2 Sheep Nutrition

There is a moderate level of interest in the topic of Sheep Nutrition among NSW producers, with 53% rating their interest as either four or five out of five (Figure 51). However, only 35% indicated that they have a high level of understanding of the topic (i.e. they rated their understanding as four or five out of five). 42% of producers showing a high level of interest in developing their understanding of the topic further.

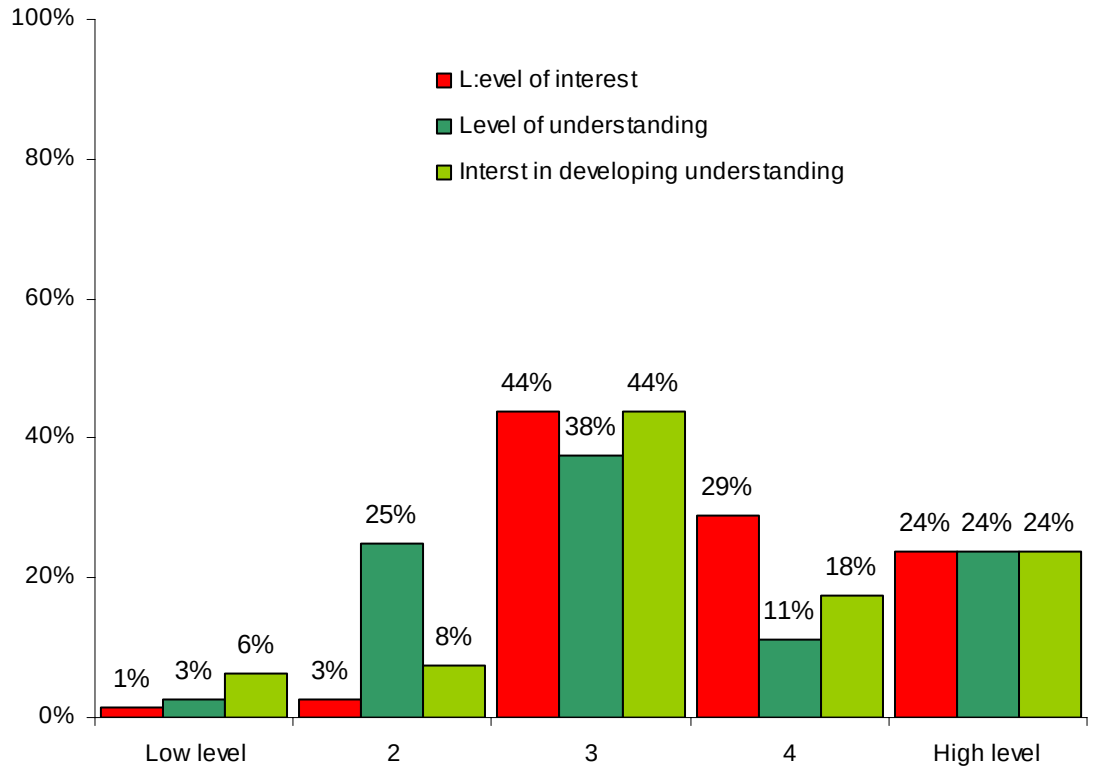


Figure 51 Level of interest in, understanding of and interest in developing understanding in Sheep Nutrition among NSW producers

The differences by demographic segments (for NSW producers only) are shown below (Figure 52). Producers aged with a post-graduate degree were least likely to be interested in developing their understanding of sheep nutrition. In contrast interest was very high among producers with less than 200 hectares (all were interested). Surprisingly, interest was also very high among producers with enterprises other than lamb, wool, cattle or grain.

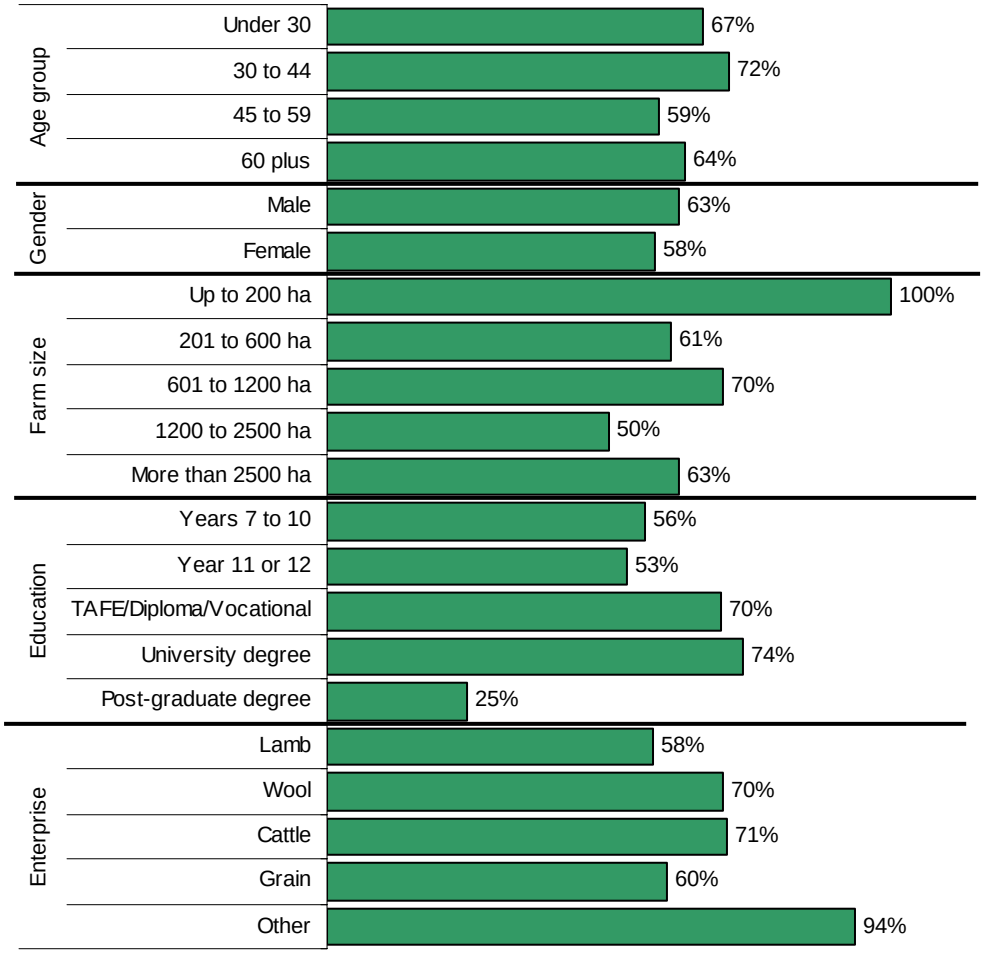


Figure 52 Interest in developing a better understanding of Sheep Nutrition by demographic segments

The proportion of NSW producers who rated their interest in improving their understanding of Sheep Nutrition as four or five out of five according to their plans for their farms was analysed. 100% of those with plans to consolidate their farms are interested in developing their understanding of the topic compared to only a third of those who are planning no major change.

Producers' interest in improving their understanding of Sheep Nutrition varies according to the decisions that they are facing. 84% of NSW producers focused on decisions related to the drought and climate are strongly interested in improving their understanding of Sheep Nutrition (i.e. they rated their interest as four or five out of five), whereas only 50% of producers who are focused on technical production decisions are interested in improving their knowledge of the subject.

Overall, 65% of NSW producers indicated that they would like to participate in formal learning about Sheep Nutrition. Notably, this includes 75% of wool producers but only 59% of other sheep producers.

The general training preferences discussed in Sections 4.2.2.1 and 4.2.3 suggest that the proposed delivery format of a two day workshop with a follow up day 12 months later needs to include significant elements of group discussion, demonstration sites and farm visits to satisfy the range of participants.

9.3.3.4 Summary by State

9.3.3.4.1 NSW

The NSW sample was younger and more highly educated than that of other states. As in other states, however, the main challenges they reported are climate, financial issues and technological change. Consistent with this, the main decisions they reported facing are technical, drought related and financial. The proportion in this state who mentioned the latter two was particularly high.

Although producer satisfaction with training was lowest in NSW, producers from this state attributed the most importance to training, with 50% indicating that training is very important, which is slightly above average. The level of producer participation in training, the proportion of producers using this training to make on-farm changes, and the proportion who have an intention to undertake training in the next 6 months were all close to the national average.

Interest in one-on-one sessions is highest in NSW and interest in e-learning is above average. The proportion of producers who feel there is enough information available was slightly below average.

Time was the main obstacle to training reported by NSW producers, while cost and relevance were reported more frequently as obstacles in this state than the others. More producers in NSW than elsewhere requested better trainers.

Compared to the producers from the other states, producers from NSW attribute the least importance to technical details, management applications and local information in the content of training activities. The most common topics of past training are grazing/pasture management, chemical handling and the wool industry, which is similar to Victoria and WA.

Consistent with NSW producers relatively high level of concern with financial issues, the main areas for improvement cited by this group are marketing, financial management and grazing/pasture management. This last felt need is strong in NSW relative to the other states.

More than half the producers expressed interest in improving their understanding of Cost of Production and a slightly higher proportion reported interest in improving their understanding of Sheep Nutrition.

Overall, these findings suggest that NSW producers are moderately engaged in training, with average levels of past and future training among other things. These generally younger and better educated farmers were relatively critical of the cost and quality of the training that is available. Although grazing/pasture management is a common area of past training, it remains a felt need for skills improvement. Financial issues and associated skills gaps are also of growing concern.

9.3.3.4.2 Victoria

The Victorian sample was characterised by older producers with generally lower levels of formal education than in the other states. Consistent with this age distribution, winding down the farm is a relatively common plan among the Victorian producers.

Almost half of the Victorian producers surveyed thought training was very important, which is slightly above average. Producer participation in past training, the proportion that have used training to make on-farm changes, and producers' likelihood of undertaking training in the next 6

months or next 1-2 years were also above average. The level of satisfaction with past training was average.

Opposite to NSW, interest in one-on-one sessions is lowest in Victoria and interest in e-learning is below average.

As for the other states, a lack of time is the main constraint on producers' training in Victoria. A higher than average number of producers in this state also reported relevance, cost and distance as obstacles to training. In keeping with their concern about time and distance, more Victorians than others requested that training be run closer to the farm.

Compared to producers in the other states, Victorian producers consider technical details and local information in training of great importance. Similar to NSW and the same as in WA, the most common topics of past training are chemical handling, livestock management and the wool industry.

Victorian producers are particularly concerned about climate relative to other states, and cite climate, financial issues and technological change as the main challenges they are facing. Associated with this, the most commonly reported areas of current decision making are around technical production, drought and reducing stock or crops. The main felt needs, however, are in computers (a notably large proportion relative to other states), marketing and animal management.

More than half the producers were interested in improving their understanding of Cost of Production. The level of producer interest in developing a better understanding of The Crop to Livestock Transition is relatively high (69%), particularly compared to WA.

Overall, producers in Victoria seem moderately engaged in training. They are strongly concerned about climate and drought issues but may be addressing these issues through means other than training as their felt training needs are in other more 'tangible' areas. The relatively strong desire for improved computer skills among this group is consistent with the higher proportion of older farmers in the sample.

9.3.3.4.3 WA

More producers from WA than other states reported that there is enough information available and that what is available is helpful, consistent with the findings about large producers, who are clustered in this state.
WA producers also had the highest participation rate in past training (100%), the highest level of satisfaction with this training, and a high level of commitment to undertaking training in the next 6 months.

Only 40% of WA producers, however, considered training to be very important, compared to around half of producers in Victoria and NSW. The proportion of producers using this training to make changes to farming practices was around average.

Time is an especially pertinent constraint on training in WA, with 83% citing this as an obstacle. The proportion of producers in this state reporting distance as a problem is also higher than average. In keeping with these two points, more producers in WA expressed concern about the time efficiency of training than in other states. They also expressed more concern about the quality of training content.

Interest in on-farm practical training sessions and short courses is highest in WA while, as in Victoria, interest in e-learning is below average. Also as in Victoria, the most common topics of past training are chemical handling, livestock management and the wool industry.

The top three challenges mentioned by WA producers are financial issues, climate and production variability. The main decisions they are currently facing are to do with technical production (a strong interest relative to other states), financial management and drought, with the latter being less prominent than in other states. An especially large number of WA producers reported a desire to improve their marketing and animal management skills, with computer skills the third most commonly mentioned need.

82% of WA producers were interested in increasing their understanding of Cost of Production, which is a significantly greater proportion than in the other states. However, only 28% are interested in increasing their understanding of The Crop to Livestock, which is far below the level of interest in Victoria.

Overall, these findings suggest that WA producers are highly engaged in training. Furthermore, given that they do not rate training as particularly important and are relatively highly satisfied with information available, it seems their engagement in training reflects a more general interest in information seeking and learning. These generally large scale producers seem to be especially busy relative to other states, with little time for e-learning or learning about introducing more stock into their businesses, but a high level of interest in practical sessions and cost of production.

9.3.3.4.4 Tasmania

Producer participation in training, and the likelihood of undertaking training in the next 6 months (8%) or next 1-2 years (2%) were lowest in Tasmania, consistent with the low participation levels for the state found by Aslin *et al.* (2006). The use of training to make on-farm changes was also lowest in Tasmania and the importance attributed to training was below average. Among those who participated in training, however, satisfaction was above average.

Common obstacles to training were reported as a problem less frequently in Tasmania than in the other states. Tasmanian producers were also least likely to report the quality of the content of training or the quality of trainers least often as areas of concern. Some comments suggested that small producers are under-catered for with information and training, however, which is more pertinent to Tasmania than other states given the relatively high proportion of producers in properties less than 600ha. Significantly, the availability of training was reported more frequently as an obstacle to training, which Aslin *et al.* (2006) also suggest may be an issue in the state.

Interest in on-farm practical training sessions, group discussions and short courses is lowest in Tasmania. As in NSW, however, interest in e-learning is above-average, which may reflect the low availability of or reliance on other forms of training.

The most common topics of past training in Tasmania were reported as grazing/pasture management, business and financial management, and whole farm planning. These topics are notably different from those reported by producers in other states. Participation rates in these areas were also lower compared to the other states, a finding consistent with overall participation rates.

As in other states, two of the most commonly mentioned challenges in the Tasmanian sample are financial issues and climate. The third is regulations, which was mentioned as a challenge far more frequently in Tasmania than in the other states. As in other states, the top three areas of

decision making for Tasmanian producers are technical production, drought and financial management, while the most commonly mentioned felt needs are skills in financial management, grazing/pasture management and marketing.

Producer interest in developing an understanding of Cost of Production is lower in Tasmania than in the other states.

These findings suggest that Tasmanian producers have an unusually low level of engagement with training; that is, that meat producers in Tasmania typically do not have “a training habit”. This may be being reinforced by a perceived lack of available training rather than by complaints with the quality of what is available, although comments that information and training do not cater for small producers suggest that the relevance of training may be a problem for the significant proportion of small producers in the state.

9.4 Appendix 4: Introductory letter to producers

Author
Partner Organisation
Address

Date

Dear [name]

I am writing to invite you to participate in a valuable social research project that Meat and Livestock Australia (MLA) are undertaking on what Australian meat producers' want and need from professional development training. As you are aware, the complexity of primary production is increasing and the amount of information available to producers is growing. In this situation, it is more important than ever that professional development training matches what farmers actually want and need to meet their business goals. MLA will use the outcomes of this research to shape how training will be designed and delivered in the future.

The research project consists of interviews with 200 randomly selected farming families across four regions of Australia: North West Tasmania, Wimmera Southern Mallee region of Victoria, the South West Slopes region of NSW, and the Central Agricultural Region in Western Australia. It is not important whether producers are MLA members or not. The purpose is to better understand meat producers' diverse experiences, preferences and needs regarding professional development.

We are writing to you because you have been randomly selected from a database of all meat producers in the [X] region as a potential interviewee. In the next week, you may be contacted by [name] of [organisation] and asked if you would like to participate. [Organisation] is working with MLA and with the consulting firm RMCG to coordinate this research in the [X] region and ensure it is locally appropriate.

Interviews will be conducted at your farm and will take approximately one hour. If applicable, we would like to involve all the members of your business or family who live or work on the property to listen to everyone's perspectives. We are hoping to conduct them between [dates].

Confidentiality will be paramount within the research and your responses will not be traceable to you. Your participation is completely voluntary and you would be free to terminate the interview at any time.

Within the next week you may receive a phone call from [name] to discuss this further. If you are contacted to participate in the project, please consider being involved as the results will enable us and MLA to better service the needs of the producers. Alternatively, if you would like to act now to put yourself forward for the project, please do not hesitate to call [name] at the [organisation] office on [number].

Yours sincerely

[author]

9.5 Appendix 5: Demographic Profile of the State Samples

	State			
	NSW	**Vic**	**WA**	**Tas**
Sample size, n=...	***80***	***65***	***60***	***92***
Age group				
Under 30	4%	5%	3%	2%
30 to 44	35%	14%	18%	27%
0-45	*39%*	*18%*	*22%*	*29%*
45 to 59	28%	35%	50%	53%
60 plus	28%	43%	20%	17%
over 45	*55%*	*79%*	*70%*	*71%*
Gender				
Male	70%	75%	75%	72%
Female	30%	25%	25%	28%
Education				
Not provided	1%	3%	7%	0%
Primary	1%	0%	3%	0%
Years 7 to 10	20%	25%	8%	1%
Less than year 11	*23%*	*28%*	*18%*	*1%*
Year 11 or 12	19%	42%	38%	49%
TAFE/Diploma/Vocational	25%	19%	27%	28%
Yr 11 to TAFE	*44%*	*60%*	*65%*	*77%*
University degree	29%	11%	17%	22%
Postgraduate degree	5%	2%	0%	0%
Degree and above	*34%*	*12%*	*17%*	*22%*
Farm size				
Not provided	3%	2%	3%	1%
Up to 200 ha	3%	0%	3%	39%
201 to 600 ha	29%	12%	8%	23%
Up to 600ha	*34%*	*14%*	*15%*	*63%*
601 to 1200 ha	34%	22%	30%	9%
1200 to 2500 ha	23%	34%	10%	15%
601 to 2500 ha	*56%*	*55%*	*40%*	*24%*
More than 2500 ha	10%	31%	45%	13%
Enterprise				
Lamb	*86%*	*94%*	80%	53%
Wool	*84%*	65%	83%	50%
Cattle	48%	49%	40%	*90%*
Grain	79%	*100%*	*98%*	27%
Other	20%	31%	25%	59%

9.6 Appendix 6: Frequency Distributions of Demographic Variables

State	Count	Percent of cases
NSW	80	27%
Vic	65	22%
WA	60	20%
Tas	92	31%
Total	297	100%

Age group	Count	Percent of cases
Under 30	10	3%
30 to 44	73	25%
45 to 59	124	42%
60 plus	78	26%
Not provided	12	4%
Total	297	100%

Gender	Count	Percent of cases
Male	216	73%
Female	81	27%
Total	297	100%

Farm size	Count	Percent of cases
Not provided	6	2%
Up to 200 ha	40	14%
201 to 600 ha	57	19%
601 to 1200 ha	67	23%
1200 to 2500 ha	60	20%
More than 2500 ha	67	23%
Total	297	100%

Education	Count	Percent of cases
Not provided	7	2%
Primary	3	1%
Years 7 to 10	38	13%
Year 11 or 12	110	37%
TAFE/Diploma/Vocational	74	25%
University degree	60	20%
Postgraduate degree	5	2%
Total	297	100%

Enterprise	Count	Percent of cases
Lamb	227	76%
Wool	205	69%
Cattle	177	60%
Grain	212	71%
Other	105	35%
Total cases	297	

9.7 Appendix 7: Interview Questions

MLA Training Needs Analysis

Interview Questions

3. **Demographics**

State:

Postcode:

Interviewees' details

Name	Age	Gender	Highest level of educ. (2^o, 3^o)	Disciplinary area of any 3^o study

Interviewee's initials	No. years in farming	Role in farm decision making (Mj/Mn)	Off-farm employment (name)	Farming organisation memberships

Enterprise mix (tick the box) and size:

Lamb:		Other enterprise?	
Wool:		Other enterprise?	
Cattle:		Size (ha):	
Grain:		No. people working on farm:	

Family owned farm? Yes ☐ No ☐

4. How would you describe your farm?

5. What are your plans for the farm over the next five years? *(What are their attitudes and aspirations towards farming?)*

6. What are some of the decisions about the farm you are facing at the moment?

7. How will you make those decisions? Who will influence you?

8. What kind of information or advice would help you make these decisions?

9. Where do you generally go for information? What sources of information do you use? *(eg. farm journals, newspaper, discussion groups, workshops, radio, internet etc)*

10. Do you find that there is enough information available?

11. How helpful do you find the available information?

1 (Not at all)	2	3	4	5 (Very helpful)

12. How could it be improved?

13. What would you say are your main strengths as farmer(s)? What are you best at?

14. What are the main skills you rely on to run your business?

    - On the practical, hands-on side

    - On the financial side

    - On the ‘people’ side

15. What level of knowledge and skills do you feel you have in the following areas:

i. *a. The science of production (eg. genetics, nutrition)*

1 (Very Low)	2	3	4	5 (Very High)

ii.*b. Hands-on animal management (eg. stockmanship, animal health and welfare)*

1 (Very Low)	2	3	4	5 (Very High)

iii. *c. Hands-on crop management (eg. use of machinery and chemicals)*

1 (Very Low)	2	3	4	5 (Very High)

iv. *d. Business management (eg. knowledge of business, tweaking the enterprise mix)*

1 (Very Low)	2	3	4	5 (Very High)

v. *d. Marketing (eg. price management)*

1 (Very Low)	2	3	4	5 (Very High)

vi. *e. Financial management (including off-farm income***)**

1 (Very Low)	2	3	4	5 (Very High)

vii. *f. People management*

1 (Very Low)	2	3	4	5 (Very High)

viii. *g. Training people (employees)*

1 (Very Low)	2	3	4	5 (Very High)

ix. *h. Other?*

16. How have you generally developed these knowledge and skills?

17. What do you find the most challenging in farming?

18. What skills would you like to improve?

19. What has prevented you from getting more skills in these areas? (eg. pace of change in that area; dislike of the area; never had to do it before)

20. What is generally the hardest thing about learning new things? (eg. time, lack of information, too much information, quality of information, complexity of topic, information in wrong form)

21. How important do you think formalised professional development (eg. short courses) is for farmers generally?

1 (Not important)	2	3	4	5 (Very Important)

22. What sorts of professional development training have you participated in the past?

x. a. Topic areas

xi. b. Way it is delivered *(eg. as field days, discussion groups, workshops)*

xii. c. Organisations

23. Have you been satisfied with this training? Why/why not?

24. Have you used this training to change what you do on the farm? If so, how?

25. In terms of the content of this training, how important to you is it to know:

xiii. *a. General principles*

1 (Not important)	2	3	4	5 (Very Important)

xiv. *b. Technical details*

1 (Not important)	2	3	4	5 (Very Important)

xv. *c. Management applications*

1 (Not important)	2	3	4	5 (Very Important)

xvi.

xvii.

xviii. *d. Case studies of how others are doing things*

1 (Not important)	2	3	4	5 (Very Important)

xix. *e. If the content is locally specific*

1 (Not important)	2	3	4	5 (Very Important)

xx. *f. Other?*

26. In terms of the way this training is presented, how useful do you find the following presentation styles:

xxi. *a. Structured "chalk and talk" learning (eg. large seminars)*

1 (Not Useful)	2	3	4	5 (Very Useful)

xxii. *b. Small group discussions*

1 (Not Useful)	2	3	4	5 (Very Useful)

xxiii. *c. Small group projects*

1 (Not Useful)	2	3	4	5 (Very Useful)

xxiv. *d. Farm visits*

1 (Not Useful)	2	3	4	5 (Very Useful)

xxv. *e. Demonstration sites/trials*

1 (Not Useful)	2	3	4	5 (Very Useful)

xxvi. *f. Individual work/reflection time*

1 (Not Useful)	2	3	4	5 (Very Useful)

xxvii. *g. Other?*

27. How interested would you be in training that is delivered on-line with some interaction with a facilitator? Why/why not?

28. Would you find the flexibility of e-learning be of benefit to you? If not, why not?

29. Overall, what would be your ideal sort of training? What is most important to you?

30. What are the main reasons you do not participate in more training? *(eg. time, energy, cost, irrelevance of topics, don't know where to find it, quality of trainers, not locally accessible)*

31. What can be done to make training more appealing to you?

32. Do you know where to go to access the training or education you want? If so where?

33. Are you intending on undertaking any training or education in the next time periods and if so what would this training ideally be like?

Time frame of when you would do the training	Topic area	Delivery mode	Organisation	Does this training exist?
In the next 6 months				
In the next 1-2 years				

xxviii. *We now need to ask you about two specific types of training MLA is thinking of running.*

34. To begin with, *Cost of Production* is a topic that MLA is concerned that producers understand.

What level of *interest* do you have in this topic?

1 (Low Level)	2	3	4	5 (High Level)

35. What level of *understanding* would you say you already have of this topic?

1 (Low Level)	2	3	4	5 (High Level)

36. How interested are you in developing your understanding of this topic?

1 (Very uninterested)	2	3	4	5 (Very interested)

b. Why is this? (What would make you more interested?)

- If you would like to develop your understanding further, would you like to participate in training about it?

Yes ☐ No ☐

- If not, why not?

e. If yes, how would you like this training to be delivered?

.

e. MLA is thinking of running a 2 day workshop on Cost of Production, with a follow up day 12 months later. Does this format appeal to you?

Yes ☐ No ☐

f. If yes, would you prefer *the follow up day* to be:

	Yes	No
One-on-one with the facilitator?		
Or a small group discussion session?		
And is 12 mths too long to wait for a follow up session?		

g. Would it bother you if at the workshop you were encouraged to attend more events?

Yes ☐ No ☐

37. *The Crop to Livestock Transition* is also a topic MLA is concerned that producers understand **['Sheep Nutrition' substituted for NSW; these questions eliminated for Tasmania].** It is keen to work with traditional grain producers that have or are planning to incorporate more livestock into their enterprise mix.

What level of *interest* do you have in this topic?

1 (Low Level)	2	3	4	5 (High Level)

38. What level of *understanding* would you say you already have of this topic?

1 (Low Level)	2	3	4	5 (High Level)

39. How interested are you in developing your understanding of this topic?

1 (Very uninterested)	2	3	4	5 (Very interested)

b. Why is this? (What would make you more interested?)

c. If you would like to develop your understanding further, would you like to participate in formal learning about it?

Yes ☐ No ☐

d. If not, why not?

e. If yes, how would you like this learning to be delivered?

40. To end, would you like to add anything to or change anything about your responses above? Have we missed any topics you think are important?

41. Overall, what is your main (one line) message for those designing farmer training in Australia? *(record verbatim)*

9.8 Appendix 8: Frequency distributions for dependent variables

Q3 What are your plans for the farm over the next five years?

	Count	Percent of cases
Grow	44	15%
Consolidate	26	9%
Increase productivity	119	40%
No major change	61	21%
Off-farm income	15	5%
Improve finances	45	15%
Sell farm	63	21%
Slow/wind down	22	7%
Infrastructure	48	16%
Conservation/environmental management	21	7%
No response	3	1%

Q4 What are some of the decision about the farm you are facing at the moment?

	Count	Percent of cases
Drought/climate	105	35%
Financial	67	23%
Marketing	15	5%
Expansion	11	4%
Technical	181	61%
Retirement/succession/selling	55	19%
Reduce stocks/crops	43	14%
Environmental	6	2%
Property improvement	10	3%
Other	4	1%
No response	14	5%

Q5 How will you make those decisions? Who will influence you?

	Count	Percent of cases
Professionals	149	50%
Networking/ other farmers	44	15%
Advertising/media	5	2%
Own experience/calculations	93	31%
Family	84	28%
No response	65	22%

Q6 What kind of information or advice would help you make these decisions?

	Count	Percent of cases
Professional	141	47%
Others' experiences	38	13%
Financial	79	27%
Climate/ weather	39	13%
No response	81	27%

Q7 Where do you generally go for information? What sources of information do you use?

	Count	Percent of cases
Internet	118	40%
Printed material	238	80%
Professionals	139	47%
Previous training	57	19%
Radio/TV	78	26%
Others' experiences	61	21%
No response	5	2%

Q8 Do you find that there is enough information available?

	Count	Percent of cases
Yes	237	80%
No	43	14%
No response	17	6%
	297	100%

Q9 How helpful do you find the available information?

	Count	Percent of cases
Not at all helpful	2	1%
2	9	3%
3	81	27%
4	140	47%
Very helpful	55	19%
No response	10	3%

Q10 How could it be improved?

	Count	Percent of cases
Conciseness	67	23%
Consistency	17	6%
Localness	26	9%
Accessibility	67	23%
Specific topics	41	14%
Timeliness	9	3%
No response	112	38%

Q11 What would you say are your main strengths as farmer(s)?

	Count	Percent of cases
Animal mgt	105	36%
Grazing/ pasture	27	9%
Mechanical/ practical	41	14%
Organisaton	20	7%
Analysis/observation	72	25%
Business skills	60	21%
Marketing	10	3%
Hard worker	30	10%
Cropping	18	6%
All rounder	30	10%
Experience	18	6%
Attitude	36	12%
Soil mgt	3	1%
Networks	31	11%
Enviro mgt	5	2%
Decision making	13	4%
Education/ knowledge	3	1%
Health	4	1%
Labour	1	0%
No response	4	1%

Q13 What level of knowledge and skills do you feel you have in the following areas?

	The science of production		Hands-on animal management		Hands-on crop management	
	Count	**Percent of cases**	**Count**	**Percent of cases**	**Count**	**Percent of cases**
Very low	8	3%	0	0%	4	1%
2	36	12%	2	1%	20	7%
3	81	27%	25	8%	70	24%
4	130	44%	159	54%	126	42%
Very high	35	12%	103	35%	47	16%
No response	7	2%	8	3%	30	10%
	297	100%	297	101%	297	100%

	Business management		Marketing		Financial management	
	Count	**Percent of cases**	**Count**	**Percent of cases**	**Count**	**Percent of cases**
Very low	1	0%	8	3%	1	0%
2	26	9%	30	10%	4	1%
3	64	22%	109	37%	65	22%
4	151	51%	115	39%	164	55%
Very high	48	16%	30	10%	50	17%
No response	7	2%	5	2%	13	4%
	297	100%				

	People management		Training people	
	Count	**Percent of cases**	**Count**	**Percent of cases**
Very low	0	0%	3	1%
2	22	7%	23	8%
3	86	29%	60	20%
4	132	44%	98	33%
Very high	42	14%	31	10%
No response	15	5%	82	28%

Q14 How have you generally developed this knowledge and skills?

	Count	Percent of cases
Formal education	74	25%
Experience	235	79%
Professional help	27	9%
Family	36	12%
Other people	39	13%
Extension	103	35%
Own research	20	7%
No response	14	5%

Q15 What do you find the most challenging in farming?

	Count	Percent of cases
Financial	137	46%
Regulations	37	12%
Time management	26	9%
Climate	145	49%
Technological changes	34	11%
Finding labour	18	6%
Decision making	24	8%
Production variability	27	9%
Mechanics	3	1%
Marketing	19	6%
Managing risk	5	2%
Succession	4	1%
Motivation	4	1%
No response	29	10%

Q16 What skills would you like to improve?

	Count	Percent of cases
Environmental management	13	4%
Cropping	25	8%
Pest control	6	2%
Marketing	56	19%
Risk management	4	1%
Financial management	50	17%
Grazing pasture management	32	11%
Genetics	17	6%
Computer	45	15%
Chemicals	8	3%
People management	27	9%
Mechanics/technology	22	7%
Animal management	38	13%
Farm planning	6	2%
Succession	3	1%
Organisation/time management	6	2%
No response	72	24%

Q17 What has prevented you from getting more skills in these areas?

	Count	Percent of cases
Time	144	48%
Relevance of training	52	18%
Cost	41	14%
Motivation	80	27%
Distance	15	5%
Don't know what's available	12	4%
Pace of change	18	6%
No response	67	23%

Q18 What is generally the hardest thing about learning new things?

	Count	Percent of cases
Time	144	48%
Relevance of training	52	18%
Cost	41	14%
Motivation	80	27%
Distance	15	5%
Don't know what's available	12	4%
Pace of change	18	6%
No response	67	23%

Q19 How important do you think formalised professional development (e.g. short courses) is for farmers generally?

	Count	Percent of cases
Not important	3	1%
2	16	5%
3	32	11%
4	106	36%
Very important	132	44%
99	8	3%

Q20 What sorts of professional development training have you participated in?

	Count	Percent of cases
A Topic areas		
Grazing/ pasture	81	27%
Chemicals	97	33%
Wool industry	83	28%
Computers	25	8%
Quality assurance	18	6%
Livestock	78	26%
Soil	21	7%
Business and financial	60	20%
Cropping	31	10%
Ohs	30	10%
Regulations	19	6%
Marketing	20	7%
Genetics	15	5%
Nutrition	23	8%
Mechanics	32	11%
Whole farm planning	36	12%
Irrigation	9	3%
Succession	3	1%
Time mgt	8	3%
Enviro mgt	18	6%
Other	49	16%
No response	35	12%
B: Way it is delivered		
Workshop	154	52%
Discussion group	76	26%
Field day	98	33%
Seminar	123	41%
Practical/ on farm	44	15%
One-on-one	6	2%
Informal e.g. Pub	1	0%
On-line	6	2%
TV link-up	5	2%
Correspondence	3	1%
No response	46	15%

C. Organisations

Government	133	47%
Private	165	58%
National RDC	54	19%
Formal education	83	29%
CMA	18	6%
Farming organisation	75	27%
No response	28	10%

Q21A Have you been satisfied with this training?

	Count	Percent of cases
Yes	233	78%
No	18	6%
Unsure	18	6%
Not applicable (did not attend training)	28	9%

Q21B Why satisfied

	Count	Percent of cases
Relevant	96	33%
Well presented	32	11%
Enjoyable	20	7%
Practical	14	5%
No response (dissatisfied)	128	44%
Not relevant (did not attend training)	26	9%

Q21C Why dissatisfied

	Count	Percent of cases
Poorly presented	16	5%
Wrong level of info	21	7%
Insufficient info	3	1%
Irrelevant	16	5%
Too long	4	1%
No response (satisfied)	29	10%
Not relevant (did not attend training)	235	80%

Q22 Have you used this training to change what you do on the farm?

	Count	Percent of cases
Yes	234	79%
No	18	6%
No response	45	15%

Q23 In terms of the content of this training, how important is it for you to know:

	General principles		Technical details	
	Count	**Percent of cases**	**Count**	**Percent of cases**
Not important	1	0%	3	1%
2	3	1%	6	2%
3	28	9%	64	22%
4	105	35%	130	44%
Very important	143	48%	77	26%
No response	17	6%	17	6%

	Management applications		Case studies	
	Count	**Percent of cases**	**Count**	**Percent of cases**
Not important	1	0%	2	1%
2	6	2%	8	3%
3	25	8%	66	22%
4	107	36%	122	41%
Very important	142	48%	81	27%
No response	16	5%	18	6%

Q24 In terms of the way this training is presented, how useful do you find the following presentation styles?

	Structured seminars		Small group discussions	
	Count	**Percent of cases**	**Count**	**Percent of cases**
Not useful	20	7%	1	0%
2	58	20%	10	3%
3	92	31%	46	15%
4	84	28%	115	39%
Very useful	27	9%	106	36%
No response	16	5%	19	6%
	297	100%	297	99%

	Small group projects		Farm visits	
	Count	**Percent of cases**	**Count**	**Percent of cases**
Not useful	12	4%	2	1%
2	21	7%	15	5%
3	57	19%	47	16%
4	108	36%	127	43%
Very useful	74	25%	80	27%
No response	25	8%	26	9%
	297	99%	297	101%

Q25A How interested would you be in training that is delivered on-line with some interaction with a facilitator?

	Count	**Percent of cases**
Yes (interested)	95	32%
No (not interested)	184	62%
Maybe	8	3%
No response	10	3%
	297	100%

Q25B Why interested

	Count	Percent of cases
Flexibility of time	25	22%
Large network	1	1%
Saves time/ travel	16	14%
Important for formal education	2	2%
Range of info available	1	1%
No response	63	56%
Not relevant	8	7%

Q25C Why not interested

	Count	Percent of cases
Computer illiterate, disinterest, slow internet	101	34%
Want personal contact	38	13%
Time/ motivation	20	7%
Distractions	8	3%
Too old	4	1%
Too much info	2	1%
Not practical training	2	1%
No response	49	16%
Not relevant	100	34%

Q27 Overall, what would be your ideal sort of training

	Count	Percent of cases
Group	86	29%
Homework	12	4%
One-on-one	30	10%
Workshop	29	10%
On farm/ practical	94	32%
Classroom	29	10%
Short course	43	14%
Field day	12	4%
On-line	5	2%
No response	67	23%

Q28 What are the main reasons you do not participate in more training?

	Count	Percent of cases
Time	204	73%
Relevance	113	41%
Cost	69	25%
Other responsibilities	9	3%
Distance	44	16%
Bias of info	6	2%
Motivation	11	4%
Availability of training	23	8%
Wrong format	8	3%
Quality of trainers	6	2%
Wrong level of detail	1	0%
Timing	3	1%
No response	6	2%

Q29 What can be done to make training more appealing to you?

	Count	Percent of cases
Better content	83	28%
Better trainers	33	11%
Lower cost	31	10%
More widely publicised	15	5%
Closer	49	16%
More time-efficient	62	21%
Smaller groups	1	0%
Better timing	24	8%
Offer on-line	6	2%
More follow-up	5	2%
More local info	5	2%
More practical	8	3%
More interactive	6	2%
Provide food	7	2%
Provide childcare	4	1%
No response	84	28%

Q30 Do you know where to go to access the training or education you want?

	Count	Percent of cases
Yes	216	73%
No	46	15%
No response	35	12%
	297	100%

Q31 Are you intending on undertaking any training or education in the next time periods?

	In the next 6 months		In the next one to two years	
	Count	**Percent of cases**	**Count**	**Percent of cases**
Yes	100	34%	53	18%
No	175	59%	207	70%
Maybe	22	7%	37	12%
	297	100%	297	100%

Q32 *Cost of production* is a topic that MLA is concerned that producers understand. What level of *interest* do you have in this topic?

	Count	Percent of cases
Low level	6	2%
2	18	6%
3	40	13%
4	85	29%
High level	136	46%
No response	12	4%
	297	100%

Q33 What level of *understanding* would you say you already have of this topic?

	Count	Percent of cases
Low level	4	1%
2	19	6%
3	102	34%
4	113	38%
High level	48	16%
No response	11	4%
	297	99%

Q34A How interested are you in developing your understanding of this topic?

	Count	Percent of cases
Low level	15	5%
2	16	5%
3	50	17%
4	98	33%
High level	106	36%
No response	12	4%
	297	100%

Q34C If you would like to develop your understanding further, would you like to participate in training about it?

	Count	Percent of cases
Yes	232	78%
No	40	13%
Maybe	4	1%
No response	21	7%
	297	99%

Q34e If yes, how would you like this training to be delivered

	Count	Percent of cases
Group	76	27%
Individual training	13	5%
Follow up	3	1%
Classroom	41	14%
Workshop	63	22%
Practical	23	8%
Online	13	5%
On farm	6	2%
Field day	3	1%
No response	55	19%
Not applicable?	44	15%

Q34F MLA is thinking of running a two-day workshop on Cost of Production, with a follow up day 12 months later. Does this format appeal to you?

	Count	Percent of cases
Yes	151	51%
No	96	32%
Maybe	7	2%
No response	43	14%
	297	99%

Q34G If yes, would you prefer the follow up day to be:

	One-on-one		Small group	
	Count	Percent of cases	Count	Percent of cases
Yes	85	29%	168	57%
No	95	32%	23	8%
Unsure	61	21%	54	18%
No response	56	19%	52	18%
	297	101%	297	101%

Q34H Would it bother you if at the workshop you were encouraged to attend more events?

	Count	Percent of cases
Yes	29	10%
No	196	66%
No response?	2	1%
Not applicable?	70	24%
	297	101%

Q35 *How to best incorporate livestock among grain enterprises* is also a topic MLA is concerned that producers understand. It is keen to work with traditional grain producers that have or are planning to incorporate livestock into their enterprise mix. What level of interest do you have in this topic?

	Count	Percent of cases
Low level	11	4%
2	15	5%
3	5	2%
4	66	22%
High level	61	21%
No response	47	16%
	205	69%

Q36 What *level of understanding* would you say you already have of this topic?

	Count	Percent of cases
Low level	2	1%
2	8	3%
3	34	11%
4	73	25%
High level	45	15%
No response	43	14%
	205	69%

Q37A How interested are you in developing your understanding of this topic?

	Count	Percent of cases
Low level	20	7%
2	13	4%
3	18	6%
4	66	22%
High level	43	14%
No response	45	15%
	205	69%

Q37C If you would like to develop your understanding further, would you like to participate in formal learning about it?

	Count	Percent of cases
Yes	114	38%
No	33	11%
Maybe	2	1%
No response	48	16%
Not applicable	8	3%
	205	69%

Q37E If yes, how would you like this learning to be delivered?

	Count	Percent of cases
Group	18	9%
One-on-one	5	2%
Field trip/ excursion	2	1%
Classroom	13	6%
Workshop	13	6%
Practical/ on farm	16	8%
No response	118	58%
Not applicable?	43	21%

9.9 Appendix 9: Specific Feedback about MLA

Positive Feedback

General

MLA is a brilliant organization - very organised

MLA has been doing a good job over the last 6 yrs

MLA doing a good job for industry, including advertising

A lot of people begrudge the MLA, but they do a good job - at least there's a voice at the end of the day

MLA publications highly valued - I often ring the 1800 number and read their publications

About MLA training

MLA good at holding courses when farmers aren't so busy

MLA delivers good training outcomes

MLA - keep up your good work - good time management, quality speakers etc.

Negative Feedback

General

MLA should not to be so distant

MLA need to get out from behind the desk

I don't know what MLA do! Just seem to take levies. Need to actually extend info

Communication at MLA poor – I phoned and left message but no one returned my call

MLA don't need glossy publications. Do it cheaper and keep costs and levies down.

Levies too high

MLA is not really delivering what beef producers need. Their marketing is not of a high standard

MLA needs to think about where they source their reps from

I consider MLA totally incompetent and incapable of handling the hard issues of the meat industry and representing the interests of the people who pay for their organisation. If it wasn't a compulsory levy, I wouldn't pay a penny for it.

MLA need to get facts right, need to do more for producers

Information needs to be consistent, unlike MLA's stance on NLIS

MLA grading needs to be better explained

About MLA training

It’s not MLA's core charter to be doing training. Let the free market take care of supplying training courses instead of MLA just trying to spend the money that is left

MLA shouldn't run courses just to keep someone employed up the chain. We would pay eight to ten thousand dollars in MLA levies each year and I wonder how much gets spent on useless things.

I spent 4 years at uni doing my training, so most short courses run by MLA are useless.

Other Suggestions for MLA

General

Increased efficiency of RD&E expenditure is needed. Are we doubling up? Assess MLA and ag dept roles

MLA need to get new research and skills into the schools so that young people can learn correctly to begin with

MLA should be promoting farming and apprenticeships in schools.

About MLA Training

MLA need to talk to people - as in this research - who at the end of the day know what's needed

I hope MLA will take a coordinated approach with other organizations. Need to consider holistic farm plans and diversification rather than focusing on individual components.

MLA please look at why farms have gone to trees

The ideal enterprise is constantly changing – MLA need to discuss the merits of each enterprise, each year

We need to know the animal that the market requires – the rules and regulations are not easily accessible

The cheapest investment MLA could make is directing the levies producers pay into a free 2-3 day course which has a representative from NLRS or a buyer to explain the condition scoring and then follow these animals through the production chain

MLA beef training days should be held locally [in Tasmania} and more often.