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Pilot study of MLA best practice programs: Farmer engagement, participation and adoption.

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Abstract

The goal of many MLA programs is to increase adoption of best practices by red meat producers. However, adoption is complex and some producers choose not to engage in any programmed events. The aim of this exploratory, qualitative project was to better define adoption and recommend ways of increasing it, through semi-structured interviews with medium-to-large scale beef and sheep producers in south-west Victoria and Tasmania. Some had participated in MLA programs; some had not. Their adoption stories are best understood within a framework we have developed called 'boundaries to change', which constrain the changes a producer is willing or able to make. Once program managers understand which boundaries are firm and which are flexible, they can work within the firm boundaries and focus on working with farmers to expand the flexible ones. MLA could reach a wider audience by telling the stories of producers who have made progress through use of some best practices but also have firm boundaries that limit a wholly best-practice system. Given the positive relationship between benchmarking and boundary flexibility observed in this project, an accessible form of physical benchmarking based on key best practices could also be extended to stretch boundaries and increase farm performance.

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Executive Summary

Medium-to-large scale beef and lamb producers represent an important target audience for Meat & Livestock Australia (MLA) best practice programs because they have sufficient scale to capture the benefits of new technology but have small enough scale to benefit from the extension and support provided by MLA programs. The goal of MLA best practice programs is to maximise participation in the programs and increase adoption of best practice recommendations by producers leading to maximised farm performance. However, adoption is a multi-faceted and complex process and some producers choose not to engage in any organised group events. This pilot project was funded between June 2013 and February 2014 to explore the adoption process and subsequently recommend ways of increasing adoption of best practices and engagement with MLA programs by the target producers.

Semi-structured interviews were conducted with 8 Participants in the MLA best practice programs More Beef from Pasture and Making More from Sheep and 16 Non-participants, with producers spread evenly between the beef and sheep industries in south-west Victoria and Tasmania. The interview questions focused on the process of on-farm change – what change has occurred, what motivated the change, and where information was sought to make the change. The extent of participation in MLA best programs was identified (and where appropriate, the contribution of this participation to on-farm change), and the role of within-farm and between-farm benchmarking in decision making was explored. Thematic analysis of the recorded and transcribed data was carried out using NVivo 10.

From the stories of producers in this project, through their descriptions of how they approach change and make decisions to improve farm practices and performance, we have developed the new concept of 'boundaries to change'. Rather than acting as a hurdle to overcome before adoption can take place, as represented by 'barriers to adoption', these boundaries shape and constrain the change that the producer is willing or able to make. The process of change, or adoption, was found to occur within these boundaries.

Once program managers understand which boundaries to change are firm and which are flexible, they can work within the firm boundaries and focus on working with producers to expand the flexible ones. They could also choose to focus on the producers with the most flexible boundaries to change.

Participants in MLA best practice programs were more likely to have flexible boundaries to change, and engage in some form of benchmarking. These producers generally sought continual improvement in their farm management, but were often also willing to change enterprises, infrastructure and farm planning in response to trusted information sources and detailed record keeping. Record keeping was found to provide confidence to assess future opportunities and directed management decisions to increase farm performance, even when some firm physical boundaries were in place. In contrast, Non-participants who were engaged in minimal recordkeeping were more likely to have either not engaged in the process of change, or approached it in a more cautious manner.

A simplified form of benchmarking based on key best practices and physical measures could be extended within and outside MLA programs to assist the uptake of best practice recommendations, stretch boundaries and increase farm performance.

Some Non-participants were critical of MLA but largely unaware of best practice programs and other services MLA provides to industry. These Non-participants do not use any MLA-related information sources.

A campaign to create greater awareness of the breadth and scope of MLA influence and investment in the beef and sheep industries may encourage future involvement of critical Non-participants, but it is essential that information is communicated through the non-MLA media mediums they are already engaged with.

Non-participants often had a preference for alternative forms of information seeking and learning over organised group sessions like field days and discussion groups. Owners and managers of neighbouring farms were identified as a particularly useful resource as they work with similar environmental variables.

Telling the stories of best practice managers increases the number of available neighbouring fences for producers to 'look over'. However, for this approach to be effective it must utilise the new knowledge from this project by focusing on producers who have made progress with some best practices, but also have firm boundaries in place that limit a wholly best practice system (i.e. making them more relatable to Non-participants) and using non-MLA communication channels.

For Non-participants, networks of local and/or expert contacts were generally preferred over organised group sessions as an information source when seeking to resolve an issue or improve an on-farm practice. For Participants, the network of contacts was also an essential information source. Before initiating change towards adopting a newly introduced best practice at an MLA event, there was a strong pattern in this project of producers requiring follow-up discussions to gain greater confidence and learn details about what the change involves and requires.

Facilitating a network of contacts for producers who have not yet established their own would provide the tools needed to further explore how a new, improved farm practice could be implemented on their farm. This approach could be incorporated into the Awareness Campaign and be linked to the Producer Stories.

Some Participants who were in the early-middle stage through to the late stage of farming life were confident record keepers, had undertaken significant change and although in a settled phase in regard to their overall operation, still sought opportunities to further fine-tune management and improve farm performance. These Participants were often less active in MLA activities now, simply for the reason that they now operate with a wealth of inherent knowledge and experience.

A mentoring system that involves pairing these experienced MLA Participants with less-experienced Participants would provide an avenue for the transfer of best practice knowledge, confidence and guidance for the less experienced Participant, and potentially increased uptake of best practice recommendations. This mentoring system could also be implemented outside of MLA programs, with recruitment occurring outside the typical MLA forms of communication. MLA could play a facilitation role in the background.

This pilot research not only led to the development of the 'Boundaries to change' concept, but also highlighted the significance of benchmarking and recordkeeping in providing the confidence to extend boundaries.

A mixed-methods approach involving a quantitative survey and follow up qualitative exploration is required to establish a representative view of producer engagement with benchmarking, and to further explore the relationship between benchmarking and boundaries to change.

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1 Background

Meat & Livestock Australia (MLA) relies heavily on best practice programs such as Making More from Sheep and More Beef from Pastures to deliver information and support to red meat producers that encourages adoption of best practices. An evaluation of MLA's investment in adoption activities has shown that extension and related activities can influence behaviour toward more productive practices (Centre for International Economics 2009). Kilpatrick (2000; 1997) established that farm profitability was related to participation in learning activities because learning brought about an increased ability and willingness to make successful changes to farm management practices.

The structure of the red meat production industry in southern areas of Australia differs substantially from that in northern areas. In particular, there are few large scale beef producers in southern areas (Wilkinson et al 2011). This research focuses on the southern areas of south-west Victoria and Tasmania.

Large scale farms (gross farm income more than \$500,000 per year) are the most likely to be able to capture productivity improvements, because they have resources to invest and can amortise investment costs over a larger production base (Knopke et al 1995). These producers are already well served by advisory services, particularly from the private sector (Wilkinson et al 2011). Producers with medium to large financial scale (\$200,000 to \$500,000) make much less use of private consultants than large scale producers. Farm businesses of this scale represent an important target audience for MLA programs because they have sufficient scale to capture the benefits of new technology but have small enough scale to benefit from the extension and support provided by MLA programs.

Beef producers have the lowest use of information and services of any Victorian agricultural industry (Wilkinson et al 2011). In Victoria, the top 20% of beef cattle producers have an average gross margin per hectare 2.5 times the average (DPI 2010, p47). Even if only some moderately productive medium scale producers can achieve productivity gains, and even if those gains are small, productivity benefits to the entire industry will be substantial.

Achieving increased adoption of best practices will not be easy. Awareness of MLA best practice programs is no guarantee of participation, and participation is no guarantee of adoption of best practices recommended in the programs. Adoption is complex. It is not a simple yes-or-no decision but a continuous process that includes non-adoption, partial or incomplete adoption, gradual adoption, stepwise adoption, adaptation, technological evolution and disadoption (Wilkinson 2011). Producers often have rational reasons for non-adoption (Vanclay 1992).

The aim of this pilot study is to examine the reach of MLA best practice programs into southern red meat producers with medium to large (but not the largest) business scale, in particular to identify the nature and extent of their engagement with and participation in the programs, their use of practices recommended by the programs and the extent to which producers use benchmarking to inform their decision making.

2 Project Objectives

1. To identify reasons for participation and non-participation in existing MLA best practice programs by medium-to-large scale beef and sheep red meat producers;
2. To explore the relationship between adoption of MLA best practice recommendations and participation in MLA best practice programs, with attention given to the process of adoption;

3. To scope engagement with benchmarking among the target producers;
4. To make preliminary recommendations on how producers who do not engage with existing MLA programs could be assisted to adopt improved practices;
5. To make preliminary recommendations on how producers who do engage with MLA programs but adopt the recommended practices to only a limited extent or not at all, could be assisted to adopt improved practices, particularly through the existing programs;
6. To make preliminary comment on how MLA best practice programs might incorporate benchmarking to encourage its use as a key business activity and learning process;
7. To make recommendations for implementation of a more comprehensive research project, based on lessons from this pilot research.

3 Methodology

Funding from MLA for this qualitative research project was secured by Professor Sue Kilpatrick and Dr Roger Wilkinson in the first half of 2013 and research fellow Dr Lydia Turner from the Tasmanian Institute of Agriculture was employed from June 2013 to manage the 9-month pilot project. As this was a small scale exploratory study a qualitative methodology was appropriate (Creswell, 2003).

An Ethics Minimal Risk application was successfully submitted to the UTAS Social Sciences Human Research Ethics Committee, with the Ethics Ref No: H0013254 granted by the commencement of the project.

In consultation with MLA's Jane Weatherley, case study areas of north-west Tasmania and south-west Victoria were selected for medium-to-large scale beef producers, and the northern Midlands of Tasmania and south-west Victoria were selected for the medium-to-large scale sheep producers. The recruitment of medium-to-large scale producers involved advertising through Primary Employers Tasmania, and the provision of contacts through MLA best practice program representatives in Tasmania and Victoria. The number of beef and sheep producers interviewed in each state who were identified as Participants and Non-participants in MLA best practice programs is provided in Table 1. There was a small variation from the target numbers of Participants and Non-participants due to the recruitment process and associated uncertainty about whether some producers had been involved in MLA best practice programs in the past.

Table 1. Number of beef and sheep producer Participants and Non-participants interviewed in Tasmania and south-west Victoria between August and December 2013.

	<i>Participants</i>	<i>Non-participants</i>
<i>Beef</i>		
Tasmania	3	3
SW Victoria	3	3
<i>Sheep</i>		
Tasmania	4	2
SW Victoria	1	5*

*This Non-participant in MMFS had participated in a MBFP program

To draw out how producers approach adopting best practice recommendations, a semi-structured interview schedule was used. The interview questions focused on the process of on-farm change – what change has occurred, what motivated the change, and where information was sought to make the change. The extent of participation in MLA best programs was identified (and where appropriate, the contribution of this participation to on-farm change), and the role of within-farm and between-farm benchmarking in decision making was explored. The interview schedule is provided as an Appendix.

Interviews were carried out between August and December 2013 by Mya Gaby and Dr Mary Graham in south-west Victoria and Dr Lydia Turner in Tasmania. The interviews were recorded and transcribed. Thematic analysis of the data was carried out using NVivo 10, with an emphasis on the themes: Farm demographics/management, MLA participation, Information sources, Motivators of change, Limitations to change and Benchmarking (within- and between-farms).

4 Results

The qualitative interviews revealed how producers approach change on their farms – why they seek change, how they reach a decision about implementing a new practice or changing enterprises, and what further changes are likely for these producers in the future. Limitations to change were also observed – the areas that producers are *not* willing to change and consider central to their operation running smoothly. The depth of this information brings a greater understanding of the underlying reasons why some producers choose to be involved with MLA best practice programs and others do not (Objective 1). The stories of change also shed light on the adoption process (Objective 2) and how record keeping and more formal benchmarking guide the process of change (Objective 3). Individual producers are represented in the report by a number (1-24) and a code that specifies their location in Victoria (V) or Tasmania (T), involvement in the sheep (S) or beef (B) industries and as a Participant (P) or Non-participant (N) in MLA best practice programs.

4.1 Reasons for participation and non-participation in existing MLA best practice programs

Many of the medium-to-large scale beef and sheep producers interviewed in this project chose not to engage with MLA because they prefer alternative forms of information seeking and learning over organised group sessions like field days and discussion groups. Whether involved in MLA programs or not, producers generally developed a network of local and/or expert contacts who they targeted when seeking to resolve an issue or improve a farm practice. For the Non-participants, this network was generally preferred as an information source over courses.

The value of talking to other farmers who were either more experienced or at a similar stage of farming was emphasised by the producers. Owners and managers of neighbouring farms were a particularly useful resource as they work with similar environmental variables. One Participant spoke of her belief that the “best information is from people who are doing it well and have success in your local area.” (VSN13) A similar opinion was held by a number of the Non-participant producers in this project, with another relying on “word of mouth and self-observation, and see(ing) what the neighbours are doing.” (VSN15) This concept of ‘looking over the fence’ was an important source of information and also a motivator for change for some farmers. Some beef producers also valued the expertise of neighbouring dairy farmers as potential sources of information, particularly around pasture management, with one Tasmanian beef producer actively involved in a dairy discussion group. A medium scale prime lamb breeder in Victoria explained that she prefers to talk to other farmers who she trusts, have good lambs, have great ideas and are doing well, over going to organised group events and being “talked at”. (VSN15 and below)

For some producers this preference also involved a general distrust of advisors of any kind, with a sheep producer in Victoria stating that he was wary of people “pushing their own barrows”, regardless of whether the advisor was privately funded, and believing that advice, “doesn’t suit every area, like I reckon every area is different and that’s why we just do our own thing.” (VSN13)

I was a teacher, I’ve been regimented all my life and I don’t like regiment any more ... I do enjoy catching up with farmers, like we go to (the market) in a car with three or four other men farmers and me...and they talk about what they’re doing, and you know you’re listening and you’re taking on ideas, and you’re asking questions. It’s kind of a real in service for me really. And some of those farmers are fantastic farmers.

Similarly, a Tasmanian beef producer criticised industry advisors for not having a thorough enough understanding of the whole system and business to provide useful advice. For these producers it was common to target other information sources by reading publications like Weekly Times and Stock and Land, using text books and selectively searching websites. This distrust of advisors was more frequently observed among non-participants in the Tasmanian beef industry. It was otherwise typical practice for producers to include some private consultants and sales representatives in their network of contacts and rely on them for information about agronomy, pasture management, animal health and chemical use. Other common sources of professional advice were stock agents for information about markets, vets for information about animal health and nutrition, and breeding bodies for information about genetics.

While some producers interviewed in this project cited time pressure as the reason why they have not been involved in MLA programs, there was the sense that this was secondary to either the above non-preference for organised group learning, or an underlying issue with MLA as the delivery organisation. For example, in Tasmania three Non-participant beef producers were critical about the way their MLA levies are spent. However, they focused on an expectation around MLA relieving market pressure for Australian beef farmers, and had minimal awareness of the best practice programs operating in the state. Awareness of the Making More from Sheep and More Beef from Pasture programs was generally higher in south-west Victoria than in Tasmania, although producers in both states were often confused about whether other courses were also delivered by MLA. For example, Pro-Graze, Lifetime Ewe Management and Best Wool Best Lamb were well attended courses, and producers in both states were unsure whether MLA was involved in the development, funding or delivery of these courses.

There were some beef (two) and sheep (two) producers in south-west Victoria who had not yet participated in MLA best practice programs, but planned to in the future. The reasons why they have not yet been involved largely revolved around convenience, with one producer and her siblings running a farm together as well as holding full-time off-farm jobs (i.e. no day-time hours available for courses) and other producers simply finding non-MLA courses more accessible location- and time-wise. A Victorian sheep producer was not aware of having the opportunity to participate in an MLA best practice program, but was positive about future participation, “If it was offered to me I’d probably do it I reckon ... because you can’t lose anything really, you can only gain knowledge ... my theory is that I only have to pick up one or two things that could gain me thousands and thousands like in the future.” (VSN18) Another stated that “I want to start getting along for a few just to see what everyone else is doing and see what some of the next steps are.” (VBN20)

The above statements reflect the attitude of the Participants in MLA programs, who attend Making More from Sheep and More Beef from Pasture events because they value the contact with other producers, the quality of content and expertise of presenting guest speakers. The discussion groups brought similar benefits of knowledge sharing that Non-participants experience when talking with neighbouring farmers, with the added strength and structure of a consistent number of pro-active producers and purposeful discussion. The open, honest discussions in small groups helped provide a cross reference for producers when considering management changes. A beef producer in south-west Victoria explained that, “most of them were in similar systems, similar farming systems. Yeah so everyone seemed to be faced with common problems I guess, and if anyone had a problem most of them in the group could relate to it.” (VBP20 and below)

I’d say we’ve all become reasonable friends and there’s always open discussion. Everyone would say exactly what they thought ... the meetings are always pretty frank and open and if you had any thoughts or questions on particular different methods yeah it was always good honest discussion.

The guest speakers attending discussion groups in south-west Victoria were also described as ‘particularly good’, ‘interesting’ and people who producers can ‘have faith in’. One producer highlighted the benefit of guest speakers in motivating the process of self-analysis and pro-active change. He said of the guest speakers that he “always found them interesting and the meetings interesting, and you always walked away from it thinking about what you were doing and any changes you could perhaps make.” (VBP19) Likewise, the ‘interesting’, ‘relevant’ and ‘useful’ information, good guest speakers and opportunity to make contacts were described as the benefits

of participating in MLA-delivered field days and workshops by Tasmanian producers. A Tasmanian sheep producer explains below how he approaches the choice to attend an MLA best practice program event and process the information he is introduced to. (TSP6 below)

You look at the program and what the speakers are speaking about. And like I said to you before you think to yourself, I'd like to hear that, I want to see what that is. And then you probably take a tenth of what they say away, you know you just sort of shuffle through and learn and get what you need.

A Tasmanian beef producer has hosted an annual MLA field day on his property with the dual purpose of showing off his cattle to potential buyers, and learning new information from the guest speaker. His belief was, "if you can get one or two good points from a field day you've done well". There is also the added benefit of adding new contacts to your network, "that you can sometimes e-mail, 'Remember me ... I'd like to ask you about this now.'" (TBP9) A Tasmanian prime lamb breeder who had recently returned to Tasmania to manage his family farm has found events in the Making More from Sheep program extremely useful for the same reasons. He explained, "I don't know many people in Tassie, so it's a good opportunity for me to see other farmers and to hear them talk, and their opinions and that kind of thing." (TSP3)

4.1.1 Summary of findings — Objective 1

- Non-participants often had a preference for alternative forms of information seeking and learning over organised group sessions like field days and discussion groups.
- For Non-participants, networks of local and/or expert contacts were generally preferred as an information source when seeking to resolve an issue or improve an on-farm practice.
- Owners and managers of neighbouring farms were a particularly useful resource as they work with similar environmental variables.
- Some beef producers also valued the expertise of neighbouring dairy farmers as potential sources of information, particularly around pasture management.
- A distrust of private and publically funded advisors was common among non-participants in the Tasmanian beef industry. These producers were also unsatisfied with their return on MLA levies, although they had minimal awareness of the MLA best practice programs operating in the state.
- Awareness of the Making More from Sheep and More Beef from Pasture programs was generally higher in south-west Victoria than in Tasmania, although producers in both states were often confused about whether other courses were also delivered by MLA.
- Half of the Non-participants in south-west Victoria planned to participate in MLA best practice programs in the future and cited limitations around time and location accessibility as the main reason why they had not to date.
- Participants in MLA best practice programs valued the contact with other producers, the quality of content and expertise of presenting guest speakers.
- MLA discussion groups brought the benefits of knowledge sharing with the added strength and structure of a consistent number of pro-active producers and purposeful discussion.

- Guest speakers at MLA best practice program events were found to initiate the process of self-analysis and pro-active change.

4.2 Relationship between participation in MLA best practice programs and adoption of MLA best practice recommendations, with attention given to the process of adoption.

Producers were asked to identify farm management changes they had made, what motivated the changes, where information was sought to make the changes and where appropriate, the contribution of participation in MLA best practice programs to farm practice change. All but one Participant could identify positive on-farm changes that were either motivated or informed by their involvement in a best practice program event, workshop or ongoing discussion group attendance. The practices most influenced by participation in MLA best practice programs were grazing management, condition scoring and weight monitoring for those managing cattle, and worm counts, genetics, pregnancy scanning and weight monitoring for the prime lamb producers.

The scale of adoption ranged from implementation of a single change for a set period, to a more encompassing change influencing many aspects of production. An example of a simple change was the reversal from rotational grazing of cattle to set stocking over the last particularly wet winter as a result of advice from a guest speaker at a recent MLA event. While the change was in response to the season, and only lasted as long as the season, the beef producer observed great benefits to the health of his pasture and soil as a result of this change. An example of a larger-scale turning point for another beef producer was the implementation of rotational grazing as a result of participating in a More Beef from Pasture MLA best practice event. This producer was in the middle of his farming life, and described the change as the biggest his farm had seen; a change that led to further changes in calving patterns to utilise more available feed, affected stocking rate and was continuing to guide farm planning of newly acquired land to accommodate small paddocks for grazing.

The process of change instigated by field days and workshops often involved an initial introduction to an idea, and was then followed by further investigations by the participant as they researched how it could be implemented on their farm. The beef producer described above, who set about changing his grazing management, says that the challenge to “become a grass farmer” was set at an MLA field day, but he had to be willing to go away and “learn how to grow grass” (TBP11). He responded positively and completed a Diploma of Agriculture which involved learning the tools needed to maximise pasture utilisation. A Tasmanian prime lamb producer described a similar process, “I think these workshops really open up ideas to you, and then when you’re going to take one on board there’s heaps of stuff on the internet where you can research things in more detail. I think now I’ve got sort of contacts, like I could probably contact [name of facilitator] or one of the people that have done the course.” (TSP3) The importance of the network of contacts was again emphasised as farmers considered best practice recommendations they were introduced to at MLA events. (TSP6 below)

I think the real gold in if you're going to take on a new innovation is being able to find a contact who has done it and ring them up and just say, "Look you know was it a success? How did you do it?" And get the nuts and bolts.

While these examples of the adoption process are described as being initiated by the introduction of an idea at an MLA best practice program event, the complex, multi-dimensional process of adoption does not always lend itself to the identification of cause-and-effect. One beef producer explained that, “Some of these things you do use, you forget you probably sparked the interest at these field days.” (TBP9)

The ongoing influence of discussion groups on decision-making was also described by participating producers. The discussion groups provided the opportunity for producers to verify their thoughts, as this participant described, “A lot of times before you make a decision you want to get some information on any changes that you’re going to make. You don’t want to change part of your operation and then find out perhaps it wasn’t the right thing to do.” (VBP19) A long-term member of a lamb producer group in south-west Victoria explained that attending the group gave, “confidence to go and have a trial yourself”. (VSP14) The discussion groups provided both the information that motivated change, and the support network that gave confidence to begin the change process.

The process of change, or adoption carried out by the producers in this project was often gradual, with measured implementation of the new practice over time as it proved successful on the producer’s own farm. One participant was not alone in saying he “walks slowly” through change, trialling recommendations of respected advisors. An example of his process is described below as he discusses how he continues to develop the implementation of best practice recommendations from MLA around pregnancy scanning, and the subsequent targeted nutrition of ewes pregnant with a single lamb, twins or triplets. (VSP14 below)

(Ewe scanning is) a practice that we’re still refining. We’re doing it but we’re still learning about how to manage our sheep once we scan them properly. So the benefits will still be coming ... I didn’t scan for triplets, where we may in the future we might scan for triplets and put them in a separate paddock as well and feed them separately. We haven’t done that yet. But singles and twins and empties we have. So there’s always the next steps I suppose.

Producers who displayed a more direct approach to change tended to be those who prioritised taking measurements and record keeping in their farm management. As well as making changes to solve problems on their farms (reactive), these producers were pro-active in seeking continual improvement to their management and maximised production efficiencies. They were also likely to have greater flexibility around what they would change in order to achieve these efficiencies; more likely to have what we have termed flexible ‘boundaries to change’. This concept of ‘boundaries to change’ and whether they are firm or flexible warrants further research and is discussed in some detail in the discussion section of this report.

All Participants in MLA best practice programs seemed to value recordkeeping of some kind, compared with less consistent use of recordkeeping by Non-Participants. Furthermore, among those most heavily involved in MLA best practice programs were the producers who used measuring and monitoring to both initiate and guide the process of change.

This more direct process of change and flexible boundaries to change was exhibited by a Victorian beef producer, who confidently changed his operation from one breed and calving system to another over a two-year period to maximise profitability, guided by his records and budgets. Similarly in Tasmania, the manager of a generational Merino and mixed-cropping enterprise successfully moved to fattening prime lambs and growing larger areas of a smaller number of profitable crops as a result

of benchmarking. These and other producers who participated in MLA best practice programs displayed a direct and confident approach to change and adoption of best practices, that was related to their reliance on recordkeeping and willingness to make significant changes to increase profitability.

In contrast, when producers were not guided by recordkeeping they were more likely to have firmer boundaries to change in place, representing areas of their management or operation they were not willing to change. A beef producer whose priority was to maintain healthy soil and content cattle through a more holistic approach to farming, has never used benchmarking as he was not interested in having profit-based comparisons influencing or pressuring his decision-making. While maintaining a profitable business is still important to this producer, the change he was willing to undergo to achieve this was limited by the firm adoption boundary of his farming approach.

Certainly the adoption process observed in this project was not always linear, with producers sometimes adopting a high level of implementation of a management tool, and then lowering the intensity of its use over time. For example, feed budgeting was an example of a management tool that was taken up to its full extent following participation in a MLA best practice program. A Tasmanian prime lamb producer said, “then we got slacker and slacker and then it sort of came to...the back of the envelope.” (TSP5) The initial measurements and recording of data led to the training of his eye and mind so that he was then satisfied he could assess his available pasture mass and adjust stocking rate accordingly. He did however admit that putting a number to pasture mass maximised efficiency of production, with less waste and maximised utilisation. The implementation of measuring and monitoring also led to this producer returning to set stocking from the recommended rotational grazing. His ability to benchmark allowed him to independently assess which system provided a greater profit and as a result he decided against further implementation of the best practice. The role of within- and between-farm benchmarking in providing the confidence to make such decisions is further discussed in the next section.

The phenomenon of decreased intensity of use of a practice over time is a significant finding of this research. It does not feature in the literature and warrants further research.

The interviews also revealed that adoption of best practices may have taken place without direct participation in MLA best practice programs. Some non-participating producers believed that they were probably implementing MLA best practice recommendations via secondary sources. Two producers have read the Making More from Sheep and More Beef from Pasture manuals as well as attending other courses, where they believed similar information may have been covered. An additional two producers were satisfied to learn about best practices straight from other farmers who have participated in the programs, have carried out their own research and implemented changes on-farm. One of these, a prime lamb breeder, said that she does not see herself as having the right mindset to participate directly in the programs, explaining that, “a lot of that strategic stuff, it’s not me” and that her local farmers network has “probably done the research for me.” (VSN15) The other producer expressed his opinion below. (VSN24)

Well yeah I'm not sure why I didn't do a More Beef from Pastures ... I think that it would be important, but I guess I feel that I'm getting a lot of the information via the other networks anyway so – and like I said I've got the manual in the bookshelf there, and I've read it all.

4.2.1 Summary of findings — Objective 2

- All but one Participant identified positive on-farm changes that were either motivated or informed by their involvement in a best practice program event, workshop or ongoing discussion group attendance.
- The scale of adoption ranged from implementation of a single change for a set period, to a more encompassing change influencing many aspects of production.
- The process of change instigated by field days and workshops often involved an initial introduction to an idea, and was then followed by further investigations by the participant as they researched how it could be implemented on their farm.
- The importance of the network of contacts was again emphasised as farmers considered best practice recommendations they were introduced to at MLA events.
- Ongoing attendance at discussion groups provides the opportunity to verify decisions about potential management changes, and the confidence to begin the process of change.
- The process of change, or adoption carried out by the producers in this project was often gradual, with measured implementation of the new practice over time as it proved successful on the producer's own farm.
- Participants who displayed a direct and confident approach to change and adoption of best practices, had a high degree of recordkeeping and a willingness to initiate significant change to increase profitability, with flexible 'boundaries to change'.
- The adoption process was not always linear, with producers in this project sometimes adopting a high level of implementation of a management tool, and then lowering the intensity of its use over time as the information was absorbed into their inherent knowledge.
- Adoption of best practices may have taken place without direct participation in MLA best practice programs, through secondary sources including reading manuals, attending similar courses (that may include MLA-based information) and learning from other producers who had attended MLA best practice programs.

4.3 Engagement with benchmarking among the target producers

Benchmarking between farms is an intensive process of recording many aspects of the farm business to calculate measures of profitability. In a formal benchmarking system, a producer then shares these measures within a group who have similar enterprises – allowing for comparisons and open discussion around opportunities to change or improve practices with the aim of further increasing profitability. The involvement of producers in formal between-farm benchmarking was established in this project, as well as involvement in the less formal forms of benchmarking listed below:

- Maintaining records and self-analysis of their farm's performance compared with data provided by other sources;
- Maintaining records and reviewing their own farm's performance on a yearly basis to reflect on whether management decisions have been successful;
- Maintaining simpler records of physical aspects of production to direct future management decisions;

- Minimal written recordkeeping but using practical systems to help guide management (e.g. using ear tags to separate weight-based mobs of sheep).

Six of the twenty-four producers in this project had participated in formal between-farm benchmarking, predominantly programs run through private consultancies. All but one of the six producers who had undertaken formal between-farm benchmarking were also participants in MLA best practice programs. While it was not possible to attribute cause and effect (i.e. whether MLA participation led to benchmarking, or vice versa, or whether they were independent activities), it was appropriate to interpret that producers who are most interested in seeking out information about best practices were more likely to commit to the high level of record keeping required in this formal type of benchmarking.

Reasons provided for discontinuing formal benchmarking included the belief that between-farm benchmarking did not accurately capture the cattle trading enterprise and a dissatisfaction with the lack of transparency of underlying calculations (and therefore lack of confidence in the resulting measures). Other producers who implemented a less formal style of benchmarking echoed these reasons for not undertaking between-farm benchmarking, in particular the sentiment that formal benchmarking could not accurately represent their enterprise or that their enterprise combination could not be compared with another in a meaningful way (e.g. cattle breeding and cropping enterprise). Two Tasmanian beef producers who were particularly disinterested in engaging in between-farm benchmarking, emphasised the competitive nature of the industry standing in the way of them wanting to share business details of their operations with any other producers. Two producers had discontinued formal benchmarking because they had learned the appropriate tools to measure performance and could continue using them without the formal group involvement. These producers now operated with a high level of 'inherent knowledge' formed from years of between- and within-farm benchmarking, and participation in group knowledge sharing courses and programs, including MLA best practice programs.

Two producers continued to benchmark in a formal manner and one, a Tasmanian beef producer, says benchmarking provided him with clear performance goals. At the time of the interview he had just reached his optimum number of breeding cattle and was working towards a goal of performing in the top performance quartile of his benchmarking group. Below he described the initial benefits when he commenced between-farm benchmarking. (TBP9)

When I first started I didn't know what other people were doing, so you don't know, well okay how far behind am I? Where am I at compared to the bigger circus?

And so I found that very helpful ... It showed up ... our weaknesses.

Producers who prioritised benchmarking also exhibited flexible boundaries to change; flexible management boundaries in all cases, and flexible enterprise boundaries in most cases. Examples of the process of change or adoption for two producers with flexible enterprise boundaries were given in Objective 2. These producers changed cattle breeds and calving patterns, and from a wool and mixed cropping operation to fattening prime lambs and more intensive cropping, not only in response to the market (reactive), but guided by extensive recordkeeping that directed their choices towards more profitable enterprises and practices (pro-active).

One of these producers commented that, “Benchmarking certainly helped that (process of change) by putting in black and white what’s profitable and what’s not ... you’ve got it all in black and white in front of you what’s making the money and what’s not, so it’s pretty easy to put a line through.” He now continues to undertake between-farm benchmarking to continue maximising efficiencies. He explained that, “It’s really just fine tuning now for the benchmarking, seeing why this year our costs are greater than they have been for the last three or four years, and identifying why that is. And saying, “Oh well look that was a seasonal thing, we couldn’t control that.” Or “Have we made a management decision somewhere that’s blown some costs out somewhere?”. (TSP5) The other producer had not undertaken formal between-farm benchmarking but maintained extensive within-farm records; another effective strategy to improve performance. The importance of prioritising measuring and monitoring (in the form of either between- or within-farm benchmarking) to guide decisions about change was consistently emphasised by producers who consistently sought improved farm performance. (VBP19)

*If you haven’t got some kind of benchmarking happening ...
you can’t really measure your improvement, can you?*

For producers who seem to have these flexible boundaries to change, but have not undertaken formal between-farm benchmarking, participation in MLA best practice programs and other publically funded courses had been an important source of information about how to measure and monitor performance. These less formal approaches to benchmarking ranged from the extensive use of spreadsheets to assess future management changes, to the use of physical measures based on animal weights or pasture growth. The young beef producer in south-west Victoria who changed cattle breeds and calving patterns described his process of running multiple spreadsheets to theoretically test the financial implications of a new management idea, combined with comparing his farm’s performance with that of south-west Monitor Farm data.

Producers spoke of the power of recordkeeping to ‘take the emotion’ out of decision-making, and to allow them to measure performance in ‘black and white’. A Tasmanian producer described the benefits of monitoring lamb weights, “When you’re having a bad day, or you’re worried, all you see are the skinny lambs, and when you’re having a good day, all you see are the fat lambs. Weighing them takes the emotion out of it and you see things just the way they really are.” (TSP6) Physical measures of performance like weighing lambs were identified as a common and accessible form of within-farm benchmarking. One producer bought scales and implemented a system of tracking calf weights as a result of participation in Better Beef, with performance of calves and pasture production then monitored by entering data into a simple computer program and the information guiding decisions about how to further improve poor performing pastures. Another producer was improving the genetics of his herd by benchmarking the weights of his calves. While seasonal differences sometimes make between-year comparisons difficult, producers could see the benefit of a simplified form of benchmarking physical aspects of production. (VBP19 below)

*Benchmarking to me would be less financial and more probably improvement of your cattle ... just a basic thing
would be probably looking at a ten year average of the weight on the calves. That would be a simple
benchmark for me.*

Some producers exhibited a commitment to extensive recordkeeping and understanding the underlying mechanics of management practices, but considered particular aspects of their business off-limits in regard to change, indicating that firmer boundaries to change were in place. One Tasmanian sheep farmer for example, had participated in MLA best programs and pursued best practice management around prime lamb production with the guidance of measuring and monitoring. However, this has taken place within some firm boundaries of maintaining a single labour unit, keeping his existing self-replacing Merino flock, and not increasing his minimal irrigation infrastructure. His approach to adoption had been flexible in regard to fine-tuning management practices, but change had been limited by labour, enterprise and infrastructure-related boundaries. These boundaries related to his aversion to increasing production costs, but the confidence provided by his between- and within-farm benchmarking experiences had enabled him to maximise efficiency within these firmer boundaries.

In contrast, a 'trial and error' process of change was described by some producers who undertook minimal record keeping and were Non-participants in MLA best practice programs. Motivators for change in such situations were largely reaction-based, in response to market pressure or solving an immediate problem that has arisen. Producers who employed minimal recordkeeping were generally more hesitant to initiate future change due to uncertainty about the best course of action or the potential returns on further investment. This was sometimes expressed as a strong aversion to debt, with statements like "you've got to have money to be innovative" (VSN15), in contrast to statements like there's "no return if you're not prepared to spend anything" (TBN1) from those who pro-actively seek change to improve profitability. A common explanation for minimal record keeping was a preference for on-farm activity over office-based work, aligned with a disinterest in figures and strategy. A prime lamb breeder based in south-west Victoria said she "prefers common sense" (VSN15) over recordkeeping. She did however refer to mentally noting trends in the average performance of ewes tagged into different mobs. For this producer, maximising the survival, health and well-being of her lambs was the first priority, and while it was a positive goal, it also acted as a boundary to change as it limited her interest in further increasing production efficiency (i.e. a farming approach boundary). There were other producers who had similarly developed practical on-farm systems (e.g. tags to keep track of ewe/lamb weight groups and crosses for ease of management), but were not interested in progressing the system to include monitoring and any subsequent changes to management.

4.3.1 Summary of findings — Objective 3

- Six producers in this project had participated in between-farm benchmarking, five of which were also Participants in MLA best practice programs, and two of which continued to benchmark in this formal manner.
- A common reason for some producers discontinuing or preferring within-farm benchmarking over between-farm benchmarking, was the opinion that formal benchmarking did not accurately represent their enterprise or that their enterprise could not be compared with another in a meaningful way.
- A common explanation for minimal record keeping was a preference for on-farm activity over office-based work, aligned with a disinterest in figures and strategy.
- Less formal within-farm approaches to benchmarking ranged from the extensive use of spreadsheets to assess financial implications of future management changes, to the use of physical measures based on animal weights or pasture growth.

- The importance of prioritising measuring and monitoring (in the form of either between-farm or less formal benchmarking) to guide decisions about change was consistently emphasised by producers who had confidently sought improved farm performance.
- Producers spoke of the role of recordkeeping to 'take the emotion' out of decision-making, and to allow them to measure performance in 'black and white'.
- Producers who prioritised some form of benchmarking had exhibited flexible adoption boundaries, and were often willing to initiate significant enterprise/infrastructure change. In some instances firmer boundaries were in place, but recordkeeping allowed for confident adoption of best practice management within these boundaries.
- A 'trial and error' process of reactionary change was described by some producers who undertook minimal record keeping and were Non-participants in MLA best practice programs. These producers were more hesitant to initiate future change due to uncertainty about the best course of action or the potential returns on further investment.

5 Discussion

The term 'barriers to adoption' has been used in agricultural extension circles for many years as a kind of short-cut term for some of the factors that might need to be considered when planning a campaign to promote increased use of recommended farm practices. Its flaws are that it is too simplistic and it offers false hope, as it carries (indeed, propagates) the assumption that all that is necessary is to find the barriers and overcome them and miraculous adoption will follow. Criticism of the term and its assumptions has existed for more than 20 years (e.g. Vanclay 1992). Despite the criticism, the term has maintained some currency, largely because of its simplicity and a lack of compelling alternatives.

Adoption is a complex process (Wilkinson 2011). A more subtle framework that embraces this complexity is needed. From the stories of producers in this project, through their descriptions of how they approach change and make decisions to improve farm practices and performance, we have developed the new concept of 'boundaries to change'. Rather than acting as a hurdle to overcome before adoption can take place, as represented by 'barriers to adoption', these boundaries shape and constrain the change that the producer is willing or able to make. The process of change, or adoption, was found to occur within these boundaries.

The types of boundaries observed in this project include:

- Management style (e.g. interest in detail)
- Farming approach (e.g. preference for organics)
- Farmer personality (e.g. preference for solitude)
- Existing enterprises (e.g. keeping an existing Merino flock)
- Existing infrastructure (e.g. maximising use of pivot irrigation)
- Labour limitations (e.g. maintaining within a single labour unit)
- Farm planning (e.g. size of paddocks)
- Natural landscape and environment (e.g. water availability)
- Debt (e.g. capacity or desire to further invest)

Both flexible and firm boundaries to change have been observed, with flexible boundaries allowing significant change, and firm boundaries acting to prevent or seriously limit change. Producers had generally firm boundaries, generally flexible boundaries, or a mixture of the two. Examples of three

producers exhibiting representative boundaries to change are provided below in Table 1. Each case in Table 1 is based on a single producer who participated in this study.

Table 1. Characteristics of three producers with representative boundaries to change: Firm boundaries ('Farmer of Solitude'; TBN8), mostly firm with flexible management boundaries ('Low Cost Farmer'; TSP6) and flexible boundaries ('Sky is the Limit Farmer'; TSP5).

	Farmer of Solitude	Low Cost Farmer	Sky is the Limit Farmer
Boundaries to Change	Firm boundaries	Mostly firm physical boundaries with flexible management boundary	Flexible boundaries
Approach to Change based on past changes	Very little change, focused on maintenance, "We're just carrying on I suppose, as we used to"	Solved management problems and increased efficiency, focused on maintaining very low costs	Eliminated elements of operation that were not profitable (including enterprises), focused on continual improvements to performance
Information Sources	Occasionally talks to farmer over the fence	Past involvement in formal benchmarking, attends courses and extension events, likes to use network of contacts to see innovations in practice before implementing change	Continued involvement in formal benchmarking, very active participant in courses including MLA best practice program in past, now relies heavily on trusted network of experts for targeted information
Extent of Record Keeping	Minimal, little influence on processes	Extensive and values understanding the underlying processes to save money, "The great thing about measurement is that you don't have to waste money if you don't have to"	Extensive and uses it to guide progressive change, "You've got it all in black and white in front of you what's making the money and what's not, so it's pretty easy to put a line through"
Potential Future Changes	Unlikely to make many changes, opposed to debt and not confident about ability to increase profits	Essential for future changes to "mesh" with existing enterprises and single labour unit, most likely to be fine-tuning management	System is streamlined and highly profitable, but open to further growth and change that records suggest will improve farm performance

Record keeping, information seeking and inherent knowledge appeared to have an active role in the process of change and were related to the shape of boundaries. For example, those undertaking minimal recordkeeping were more likely to have either not engaged in the process of change like the 'Farmer of Solitude', or approached it in a more cautious manner. In contrast, there was often a positive relationship between flexible boundaries and a high level of recordkeeping, particularly in the area of management. Record keeping was found to provide confidence to assess future opportunities and directed management decisions to increase farm performance, as was exhibited

by the 'Low Cost Farmer', who had firm physical boundaries in place but continually increased farm performance within the boundaries.

The pattern of information seeking for producers like the 'Sky is the Limit Farmer' may have changed from participation in courses to a more targeted approach using their extensive network of contacts, combined with relying on their inherent knowledge to guide current and future change. The more physical changes of enterprises, infrastructure and farm planning had already been carried out for the 'Sky is the Limit Farmer' and further improvements to farm performance were being sought by further fine-tuning to management. This confident process of change, albeit now mainly at a management level, was again guided by extensive recordkeeping.

Change was observed to be a re-active or pro-active response to improving performance, or a combined re-active and pro-active response. An example of a re-active initiator of change was a market downturn, while an example of a pro-active initiator of change was a goal to reach one 'beast per acre' throughout a large operation on multiple properties. Flexible boundaries were often associated with pro-active initiators of change, with the process of change more likely to involve recordkeeping and participation (either past or present) in courses including MLA best practice programs.

The relationship between initiators of change, the process of change, and boundaries to change, is represented in Figure 1. The capitalisation of 'MANAGEMENT' as a boundary to change, reflects the capacity of producers to achieve significant improvements to farm performance if they have flexible management boundaries, even when other firm boundaries are in place. The other boundaries provided as examples in Figure 1 are in no particular order.

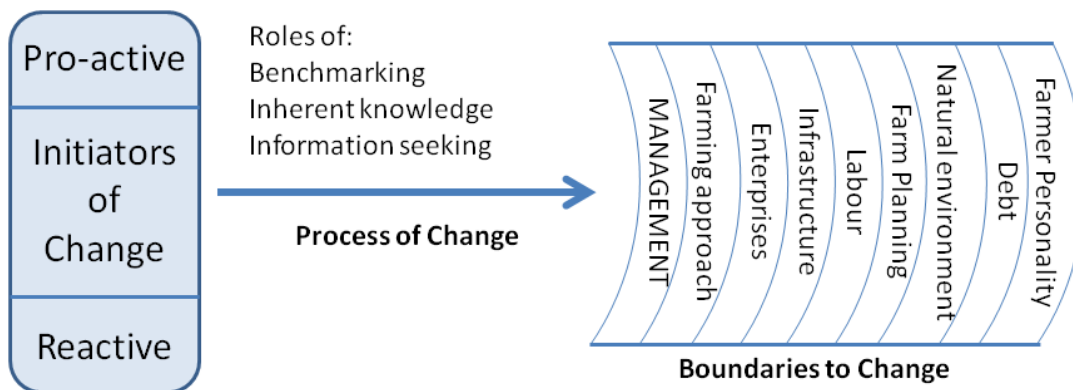


Figure 1. initiators of change, the process of change, and boundaries to change.

Just as Holling's (1973) concept of resilience revolutionised ecology (a resilient system was not one that resisted all perturbations but instead was flexible enough to change when necessary), the concept of boundaries to change can bring a new flexibility to agricultural extension. Once program managers understand which boundaries to change are firm and which are flexible, they can accept and work within the firm boundaries and focus on working with producers to shift and expand the flexible ones. They could also choose to focus on the producers with the most flexible boundaries to change. Evaluating the initiators for past change for producers, whether largely pro-active or re-active would provide a guide to how open they are to considering best practice recommendations that are outside meeting immediate needs. Producer approaches to record keeping, information

seeking and the extent of their inherent knowledge also provide insight to the kind of potential changes they are likely to seek in the future. The following Recommendations section focuses on specific suggestions for encouraging engagement of Non-participants in MLA best practice programs, increase uptake of best practice recommendations across the beef and sheep red meat industries, and the potential role of benchmarking in these processes.

6 Recommendations

6.1 How can producers who do not engage with existing MLA programs be assisted to adopt improved practices?

Some Non-participants were critical of MLA but largely unaware of best practice programs and other services MLA provides to industry. A campaign to create greater awareness of the breadth and scope of MLA influence and investment in the beef and sheep industries may encourage these Non-participants to consider future involvement with MLA through participation in best practice programs or exploring the associated recommendations. It is essential that this campaign to increase awareness brings information to the Non-participants through mediums they are already engaged with. For example, distribution of information through mediums like the widely read publications *Stock and Land* and *Weekly Times* would bring information to Non-participants who are not actively seeking MLA-related material.

As well as including basic information about MLA services it is essential that this campaign extends the use of MLA producer stories into non-MLA information sources. For Non-participants, networks of local and/or expert contacts were generally preferred over organised group sessions as an information source and many Non-participants do not read any MLA publications. It is not uncommon for producers to avoid group activities of any kind based on their introverted personality. In a study of the personalities of central Queensland graziers, Marilyn Shrapnel, a psychiatrist with a farming background, found that they were “a *special breed*, with characteristics that set them apart from members of an urban population” [italics in original] (Shrapnel and Davie 2001, p. 177). Of the 14 main personality styles expected in the wider community, the individuals Shrapnel interviewed (from 30 families) exhibited one of only five styles, which shared the characteristic that they were uncomfortable in group situations.

While these producers may not be interested in attending organised group learning sessions they are likely to be interested in the journey of fellow producers to improve performance. Owners and managers of neighbouring farms were identified in this project as a particularly useful resource, with ‘looking over the fence’ established as an important part of the process of change for these producers. Telling the stories of best practice managers through less formal avenues could be a way of increasing the number of available neighbouring fences to ‘look over’. Rather than being physically limited to the expertise of producers in the local area, this approach could open up opportunities to learn in a non-threatening way from a fellow producer. While a Non-participant MLA levy payer may not be motivated to read MLA publications like *Feedback*, due to their view of such organisations ‘pushing their own barrow’, they may be open to reading the stories of producers who have achieved positive change in *Stock and Land*.

The stories of best practice producers could be with links to multi-media presentations that provide the information visually. Again, the multi-media should not be embedded in the MLA website but use a more neutral approach. It could be of value to investigate whether producers would use popular multi-media sources like Facebook to explore the stories of other producers. In developing the

content of the producers' stories, referring to the producers' boundaries to change could provide a source of common ground for a reader to connect with (i.e the need to limit labour units, or prioritising animal welfare). Rather than only presenting producers who have their whole system operating at a best practice level, producers could be presented who have been able to achieve change in a particular management area but have some areas they are not (possibly yet) able to change. This approach acknowledges the reality of many producers who operate with firm adoption boundaries in place and cannot therefore consider changing some aspects of their operations. This approach would aim to ignite interest in a particular best practice management area and invites the reader to further investigate the underlying 'nuts and bolts'.

The next component of the information provided could be contact information for the best practice producer (who would need some reimbursement for acting as an official best practice ambassador) and any other experts relevant to that particular best practice. For Non-participants, networks of local and/or expert contacts were generally preferred over organised group sessions as an information source when seeking to resolve an issue or improve an on-farm practice. This approach would involve MLA essentially facilitating a network of contacts for producers who have not yet established or realise they would benefit from expanding their own.

The aim of this campaign would be to motivate change by taking a best practice producer and his/her story to the Non-participant where they are, rather than waiting for them to engage in structured MLA activities before hearing from an inspiring guest speaker. The MLA-facilitated network of contacts can then provide the tools needed to further explore how a new, improved farm practice could be implemented.

6.1.1 Summary of recommendations — Objective 4

- Implement a campaign through non-MLA communication channels to create greater awareness of the breadth and scope of MLA influence and investment in the beef and sheep industries.
- Tell the stories of best practice managers through less formal, non-MLA avenues (including multi-media links) to increase the number of available neighbouring fences to 'look over'.
- Ensure these stories include important elements of the process these producers have gone through to achieve change and best practice, including their adoption boundaries – which may provide a connection with the Non-participant reader.
- Facilitate a network of contacts for producers who have not yet established their own, and in doing so, the tools needed to further explore how a new, improved farm practice could be implemented on their farm.

6.2 How can producers who engage with the programs but adopt the recommended practices to only a limited extent or not at all, be assisted to adopt improved practices, particularly through the existing programs?

It is important to note that all but one Participant believed they had improved farm practices as a result of being involved in an MLA best practice program. It is possible that within the small sample size of Participants there was a bias for recruitment of producers who had a high commitment to attending MLA program events and implementing best practice recommendations. Overall there was the sense that non-engagement with MLA was a larger issue than uptake of best practices by those within the best practice programs. However, two opportunities to further influence the process of change and adoption of best practices by Participants are discussed below.

The first overlaps with part of the campaign previously suggested. Before initiating change towards adopting a newly introduced best practice, there was a strong pattern in this project of producers

requiring follow up discussions to gain greater confidence and details about what the change involves and requires. These follow up discussions were with previously established contacts, or guest speakers/other Participants from the MLA events. While this was a clear path for many Participants, there may be producers who are yet to establish their own network of trusted contacts. The facilitation of a network of contacts by MLA that consists of producers (perhaps paid for this role) and advisors who can promote and model particular best practices, may speed up the process of change for these producers.

The second opportunity also utilises the inherent knowledge and experience of MLA Participants who are known best practice producers, by giving them the role of mentors in the existing programs. A mentoring system that involves pairing an experienced MLA Participant with a less-experienced Participant for a set period (e.g. one year) would provide another avenue for the transfer of best practice knowledge. The continuity of the one-on-one communication would provide confidence and guidance for the less experienced Participant, and may therefore speed up the process of change for these producers. In this project, there were producers who were in the early-middle stage through to the late stage of farming life who were confident record keepers, had undertaken significant change and although in a settled phase in regard to their overall management, still sought opportunities to further fine-tune management and improve farm performance. These Participants were often less active in MLA activities now, simply for the reason that they now operate with a wealth of inherent knowledge and experience. This could therefore be an ideal stage for MLA to engage these producers in mentor roles, to help less experienced producers increase their use of best practices and farm performance.

The following situations were identified where this mentoring system could be most effective:

- In Tasmania, some producers are decreasing the scale of cropping enterprises (due to market conditions) and increasing the scale of either their beef or prime lamb enterprises, and are actively seeking more knowledge about the enterprise they are scaling up.
- In the midlands in Tasmania, many farmers have increased their irrigation capacity, have discontinued wool production and have or are in the process of changing their cropping/pasture system to maximise efficiency of their new infrastructure (i.e. pivot irrigation). They were at varying stages of establishing how to best integrate prime lamb production with the new crops.
- It was not uncommon for second or third generation farmers interviewed in this project (particularly in south-west Victoria) to have completed a University degree in a non-agricultural area, and then returned to the family farm to commence management. This is a crucial stage of farming life where a less experienced producer could benefit from regular communication with a more experienced producer outside his/her family.

This mentoring system could also be implemented outside of MLA programs, with recruitment occurring outside the typical MLA forms of communication.

6.2.1 Summary of recommendations — Objective 5

- The facilitation of a network of contacts by MLA that consists of producers (perhaps paid for this role) and advisors who can promote and model particular best practices, may speed up the process of change for these producers.
- A mentoring system that involves pairing an experienced MLA Participant with a less-experienced Participant would provide an avenue for the transfer of best practice knowledge,

confidence and guidance for the less experienced Participant, and potentially increased uptake of best practice recommendations.

6.3 How can MLA best practice programs incorporate benchmarking to encourage its use as a key business activity and learning process?

Many producers in this project were against between-farm benchmarking for a number of reasons, including the fact that different enterprises are not necessarily comparable, the system is not always a good fit for an operation (e.g. cattle trading, mixed enterprises), and the intensity of record keeping required is too high. Another disincentive for some was the unwillingness to disclose business processes and financial details to other producers – which is an essential part of the formal benchmarking process. ‘Secret farmers’ who are seen to take in information from others without offering any of their own in return — and the opprobrium with which they are viewed in the farming community — have been described by Howden et al. (1998).

In the MLA group settings, it is not likely that between-farm benchmarking would be achievable or meaningful for the majority of Participants. While those who had been involved in between-farm benchmarking were positive about its contribution to their decision making and farm performance, less formal benchmarking practices were described in this study that were also highly effective. It was clear that the extent of record keeping by a producer was related to his/her degree of confidence in initiating change. Record keeping guided the process of change for many producers by providing either the financial or physical reason for a decision, rather than a purely instinct- or emotion-based reason. While the use of intensive financial record keeping within MLA group settings may not be appealing to many producers, a simplified form of benchmarking could be accessible and meaningful. It would be based on key best practices and physical measures that lead to improved performance. Rather than a group of producers comparing their farms, they could discuss within-farm performance for each producer using these key physical measures. The experience of the group would be utilised as knowledge is shared, and best practices would naturally be promoted as Participants learn how to use, or increase their use of these physical measures.

6.3.1 Summary of recommendations — Objective 6

- A simplified form of benchmarking based on key best practices and physical measures could be developed, then implemented through MLA group sessions to increase farm performance.
- The experience of the group would be utilised and practice change encouraged as within-farm performance for each producer is discussed using these key physical measures.

The relationship between the project recommendations is represented below in Figure 2. The placement of the recommendations is important. The suggested Awareness campaign and Telling producers’ stories would operate outside the existing MLA best practice program to impact Non-participants, using non-MLA information sources to deliver information. The suggested Facilitating contact networks and Mentoring system operate both outside and inside the MLA programs, reflecting that these recommendations assist the adoption process for both Participants and Non-participants by utilising the knowledge and experience of best practice producers and other experts. Physical benchmarking is anchored within the existing MLA best practice programs but its importance and influence in recommendations that extend outside MLA programs is represented by the shaded area. Tools to measure and monitor physical aspects of production could be formally extended within existing programs, but the concept should also be facilitated through contact networks, mentoring and the telling of producer stories.

The significance of producers’ boundaries to change should not be underestimated when considering how to influence and increase adoption of MLA best practices. This project identified for

the first time the role of adoption boundaries in constraining change; in limiting the extent of change producers' are willing or able to make. An example of how to integrate this knowledge was given in the suggestion to tell stories of producers that acknowledge the reality of adoption boundaries but excite the reader about the change and improvements to farm performance possible within these boundaries. Further research is required to further explore and define boundaries to change and how these influence decisions around adoption of best practice recommendations.

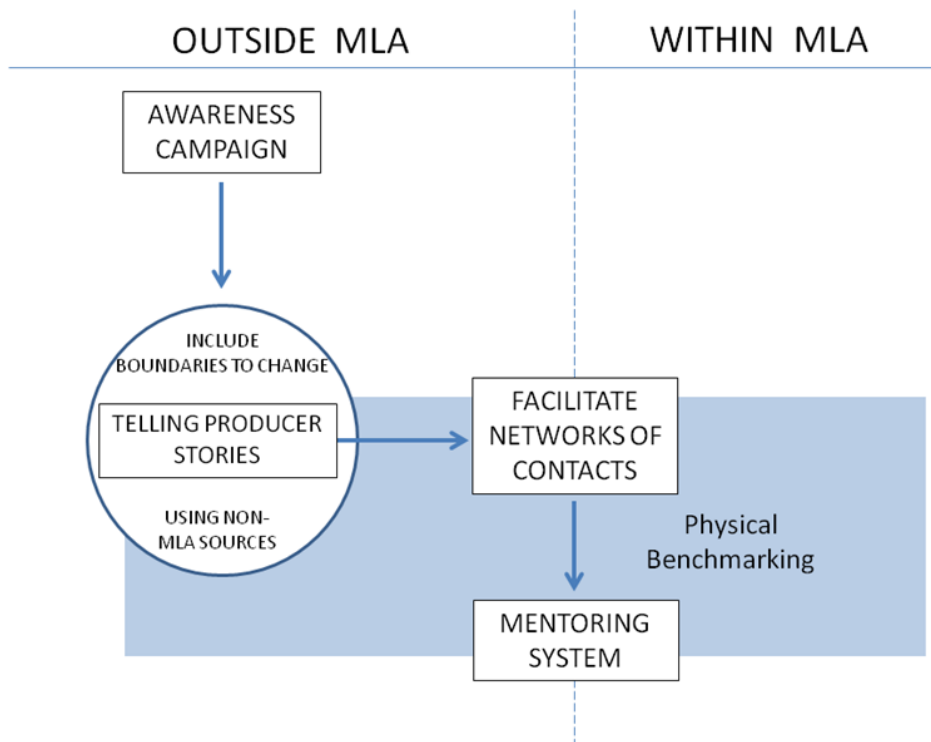


Figure 2. The relationship between project recommendations and their placement outside of, and within MLA existing programs.

6.4 Suggestions for implementation of a comprehensive research project, based on lessons from this pilot research.

A more comprehensive research project is required to further explore, define and determine the best use of the new concept of 'Boundaries to change'. The work would establish the characteristics of boundaries, explore what motivates producers to extend boundaries and the relationship of boundaries with seeking to improve farm performance. The shape and flexibility of boundaries over the stages of farming life is also of interest.

This pilot research not only led to the development of the 'Boundaries to change' concept, but also highlighted the significance of benchmarking and recordkeeping in providing the confidence to extend boundaries. MLA may be particularly interested in further investigating the relationship between benchmarking and boundaries to change. A follow up project would adopt a mixed-methods approach. The first component would be a quantitative survey to get a more representative

view of the use of and characteristics of benchmarking in the red meat industry, followed by qualitative work to further explore its relationship with adoption of best practices, and changes in intensity of use over time.

The phenomenon of reduced intensity of use of a practice over time as a producer develops inherent knowledge as a substitute for detailed recordkeeping and benchmarking is itself worth further research, as it does not feature in the literature.

7 Conclusion

The concept of boundaries to change, newly identified in this project, has the potential to revolutionise the design and conduct of practice change programs, not only for red meat producers but all farmers. In a small project such as this the concept of boundaries to change can be only sketched out: it clearly warrants elaboration in a larger research project. Such a project is likely to be of interest to many organisations besides MLA. Meanwhile, even something as simple as being mindful of the difference between firm and flexible boundaries can help program managers plan the implementation of best practice programs.

This project has produced a range of other findings and recommendations of immediate use to MLA, including the potential for targeting producers outside MLA's usual reach by going outside MLA's usual communication channels, prospects for facilitating a mentoring program, and the development of simplified benchmarking systems. Simplified benchmarking systems clearly warrant further research, partly to determine the benefits of such systems and how they might be used, but also to elaborate on the newly identified phenomenon of reducing intensity of use of detailed recordkeeping and benchmarking once it becomes inherent knowledge. Even so, the findings and recommendations from this preliminary research provide MLA with valuable insights for improving the design of best practice programs.

8 Appendix: interview schedules

PARTICIPANTS in MLA BEST PRACTICE PROGRAMS

CONTEXTUAL:

To start, can you please tell me a bit about your farm?

Probe: Industries, size, crops, livestock, water, pastures.

How long have you been farming? Your family/company?

Do you run the farm on your own?

If No, who helps you?

Where do you get advice and information from, to help you manage your farm?

Probe:

Workshop/events

On-going farmer groups

Professionals (i.e. accountant, consultant, stock agents)

Farm management team members

Other farmers

Written material (i.e. web/books/newsletters/journals)

Have you changed the way you manage your farm over the last 10 years or so?

Prompt: Changes to what you do, or how you do it?

PROCESS OF CHANGE:

Let's move onto talking about how you approach making changes on your farm.

Can you choose one significant way you have changed your farm management during the last 3 years?

Prompt: It could be a new practice that you've adopted?

Probe:

Animal health

Pasture and soil management

Genetics and breeding

Grazing management and supplementary feeding

Heifer/Calf management or Ewe management

Marketing/Business management

Where did you get the idea that led you to make the change?

Probe: person, media, other source

Did you need any extra information or support before making the change?

Refer to possible sources of info for farmers if necessary from Contextual section

How did you go about making the change?

How long has the process taken?

Have all the changes you've trialled in this area been successful?

What kind of benefits/differences do you see on your farm now as a result of the changes that have been made?

How long was it before you started seeing some results?

Are there further changes in this area that you'd like to make in the future?

If yes: what, why, when, why not yet?

Was there something you would have liked to try, but didn't?

If yes: what, why, when, why not?

INVOLVEMENT IN MLA PROGRAMS:

Let's talk about your involvement in More Beef from Pastures/Making More from Sheep

Why have you chosen to participate in MBfP/MMfS?

How many modules have you completed?

How useful was the program for you and your business?

How important was attending MBfP/MMfS in helping you make the changes we've just discussed?

IF MLA PROGRAM WAS IMPORTANT

What was it about the program that worked well for you?

Did you do everything recommended?

Were there any parts of the recommended practice that you didn't adopt, or only partially adopted?

Can you tell me about any other change you've implemented on your farm as a result of participating in MBfP/MMfS?

Prompt: It could be a new practice that you've adopted?

Probe:

Animal health

Pasture and soil management

Genetics and breeding

Grazing management and supplementary feeding

Heifer/Calf management or Ewe management

Marketing/Business management

Did you need any extra information or support other than from More Beef from Pastures before making the change?

Probe:

Workshop/events

Professionals (i.e. accountant, consultant, stock agents)

Farm management team members

How did you go about making the change?

On-going farmer groups

Other farmers

Written material

How long has the process taken?

Have all the changes you've trialled in this area been successful?

What kind of benefits/differences do you see on your farm now as a result of the changes that have been made?

How long was it before you started seeing some results?

Are there further changes in this area that you'd like to make in the future?

If yes: what, why, when, why not yet?

IF MLA PROGRAM WASN'T VERY IMPORTANT

Can you tell me about any change you've implemented on your farm as a result of participating in the MBfP/MMfS modules?

Prompt: It could be a new practice that you've adopted?

Probe:

Animal health

Pasture and soil management

Genetics and breeding

Grazing management and supplementary feeding

Heifer/Calf management or Ewe management

Marketing/Business management

Did you need any extra information or support other than from MBfP/MMfS before making the change?

Probe:

Workshop/events

On-going farmer groups

Professionals (i.e. accountant, consultant, stock agents)

Farm management team members

Other farmers

Written material (i.e. web/books/newsletters/journals)

How did you go about making the change?

How long has the process taken?

Have all the changes you've trialled in this area been successful?

What kind of benefits/differences do you see on your farm now as a result of the changes that have been made?

How long was it before you started seeing some results?

Are there further changes in this area that you'd like to make in the future?

If yes: what, why, when, why not yet?

Thinking back now to your involvement in MBfP/MMfS ...

Was there something you would have liked to try, but didn't?

If yes: what, why, when, why not?

How could the program be improved to provide greater support to assist you in making decisions and implementing change?

Prompt: What was missing?

BENCHMARKING:

Can we talk about benchmarking now? Benchmarking involves keeping records of the physical and financial performance of your farm and keeping track of changes over time, or comparing your farm's performance with other similar farms.

What do you know about benchmarking?

Have you used benchmarking on your farm?

IF YES:

How does benchmarking fit into your farm management?

Prompts: which management areas, implemented to what extent?

How long have you been interested in using benchmarking for?

Where do you go to for information and/or support in implementing benchmarking?

How has participation in the MLA program influenced your use of benchmarking?

IF NOT:

Is benchmarking something you would be interested in using in the future?

If yes: what aspect, why, when, why not yet, where would you go for information and/or support about it?

If no: why not appealing?

Thank you for your time!

NON-PARTICIPANTS in MLA BEST PRACTICE PROGRAMS

CONTEXTUAL:

To start, can you please tell me a bit about your farm?

Probe: Industries, size, crops, livestock, water, pastures.

How long have you been farming? Your family/company?

Do you run the farm on your own?

If No, who helps you?

Where do you get advice and information from, to help you manage your farm?

Probe:

Workshop/events

On-going farmer groups

Professionals (i.e. accountant, consultant, stock agents)

Farm management team members

Other farmers

Written material (i.e. web/books/newsletters/journals)

Have you changed the way you manage your farm over the last 10 years or so?

Prompt: Changes to what you do, or how you do it?

PROCESS OF CHANGE:

Let's move onto talking about how you approach making changes on your farm.

Can you choose one significant way you have changed your farm management during the last 3 years?

Prompt: It could be a new practice that you've adopted?

Probe:

Animal health

Pasture and soil management

Genetics and breeding

Grazing management and supplementary feeding

Heifer/Calf management or Ewe management

Marketing/Business management

Where did you get the idea that led you to make the change?

Probe:

Workshop/events

Professionals (i.e. accountant, consultant, stock agents)

Farm management team members

On-going farmer groups

Other farmers

Written material

Did you need any extra information or support before making the change?

Prompt: Who/what helped you decide to go ahead?

How did you go about making the change?

How long has the process taken?

Have all the changes you've trialled in this area been successful?

What kind of benefits/differences do you see on your farm now as a result of the changes that have been made?

How long was it before you started seeing some results?

Are there further changes in this area that you'd like to make in the future?

If yes: what, why, when, why not yet?

Was there something you would have liked to try, but didn't?

If yes: what, why, when, why not?

MLA PROGRAMS:

I'd like to talk about a best practices program funded by MLA, called More Beef from Pastures/Making More from Sheep. This program has a number of modules, delivered through Bestbeef/Bestlamb farmer groups.

What do you know about the MBfP/MMfS program?

Have you considered participating in this program?

Do you think you have taken on any practices recommended through MBfP/MMfS?

IF YES:

What is the practice?

Where did you get the idea that led you to make the change?

How did you go about making the change?

How long has the process taken?

Have all the changes you've trialled in this area been successful?

Are there further changes in this area that you'd like to make in the future?

If yes: what, why, when, why not yet?

Going back now to the MBfP/MMfS program....

You said you've chosen not to take part in the program. What would make this program more appealing for you to attend in the future?

BENCHMARKING:

Can we talk about benchmarking now? Benchmarking involves keeping records of the physical and financial performance of your farm and keeping track of changes over time, or comparing your farm's performance with other similar farms.

What do you know about benchmarking?

Have you used benchmarking on your farm?

IF YES:

How does benchmarking fit into your farm management?

Prompts: which management areas, implemented to what extent?

How long have you been interested in using benchmarking for?

Where do you go to for information and/or support in implementing benchmarking?

IF NOT:

Is benchmarking something you would be interested in using in the future?

If yes: what aspect, why, when, why not yet, where would you go for information and/or support about it?

If no: why not appealing?

Thank you for your time!

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