On-Farm EMS and Environmental Labelling in the Pastoral Industries

Final Report
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Executive summary

Background
This project was one of 16 National EMS Pilot Program projects which were funded by the Natural Heritage Trust, through the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF).

The purpose of this pilot project was to develop, implement and evaluate EMS in the pastoral industry, and use it as a foundation for credible labelling and marketing of premium meat and fibre products.

Accordingly, the objectives of this project were:

1. To develop, apply and evaluate on-farm EMS for pastoral properties in Queensland;
2. Add value to the EMS by building on it with private environmental labelling of pastoral products, including a 'Koala Friendly' label of the Australian Koala Foundation; and
3. Develop and market-test meat and wool products bearing environmental labels.

Brief summaries of the main components of this project are provided below.

Customising EMS for the pastoral industry
While a number of agricultural EMSs were available for general use, these were largely not developed for or suited to the pastoral industry. Consequently, this pilot project developed a form of EMS that was appropriate for this industry.

The resultant product, called the Pastoral EMS, contained seven elements, being an environmental policy, risks assessment, objectives and targets, action plans, implementation of action plans, monitoring, and a management review. Together, these formed a continuous improvement management system of plan, do, check and review.

Producers were given considerable freedom to choose the risks, including environmental, production and marketing, to be addressed by their Pastoral EMS, and they worked on these at their own pace. This flexibility accommodated the varied reasons why producers wished to adopt EMS, as well as the varied levels of time and energy that they were able to invest in it.

The Pastoral EMS provided producers with a relatively easy entry point to EMS implementation, enabling them to gain experience and achieve early results without having to work their way through the longer and more complex ISO 14001 compliant EMS.

Recruitment of pastoral industry partners
Initially, this pilot project sought to establish meat and wool demand chains that would act as a driver for the adoption of EMS and environmental labelling by pastoral producers. Delays in the establishment of these chains meant that these could not be used as the principal mechanism for recruiting pastoral producers from western Queensland. Instead, better business management, and recognition for good land and livestock management practices were the messages most used during producer recruitment.

Recruitment of pastoral producers commenced with the widespread promotion of two EMS information days at which EMS was explained and discussed. This promotion included print and radio advertisements, regional mail outs and personal telephone contact. As a result of this overall promotion of EMS and the EMS information days, producers from over 100

properties expressed interest in adopting EMS. Pilot project staff then visited the 36 individual producers and seven producer groups that had expressed the most interest in EMS and invited them to join the project.

Producers from 39 properties formally accepted the offer to join the pilot project by completing a DAFF baseline survey. The two most important reasons given by producers for deciding to adopt EMS during this survey were that it could be used to demonstrate their sustainable production practices to government and the wider community, and it would strengthen their environmental management.

Pastoral EMS training

The unique nature of the Pastoral EMS required this pilot project to develop and deliver EMS training to producers. Using the processes and materials developed, the pilot project team trained producers from 40 properties (21 in groups and 19 individually) in the elements of the Pastoral EMS. Training for producer groups primarily occurred through two meetings, while individual producers were either trained at the introductory session, or during one or two additional meetings.

Pastoral EMS training was based on a facilitated learning approach, where producers learnt about EMS as they developed this for their property. It was also highly flexible, with the number and frequency of meetings based on producer needs. This approach appeared appropriate for this target group of producers, as training ran smoothly, producers developed a good understanding of and confidence in developing their EMS, and most progressed through to the end of their first cycle of the Pastoral EMS.

The primary training tool used was the *Pastoral EMS Guide* and this was effective in improving producers' knowledge and understanding of EMS, primarily due to its familiar language and the simple explanations and relevant examples it contained.

In general, the producer groups were easier to train than individuals due to the structured nature of the meetings, more in-depth explanations of the Pastoral EMS, use of discussion generating activities and the opportunity to write up their EMS during the training meetings. Groups also derived a number of benefits from working together, including exposure to a diverse range of views and knowledge.

Producer development and implementation of the Pastoral EMS

Producers from 37 properties, 21 in four groups and 16 individually, commenced development of the Pastoral EMS. Of these, producers from 32 properties developed and documented all elements of their EMS, and commenced implementation of their action and monitoring plans.

Development of EMS by producers was mostly restricted to the meetings with pilot project staff, and only a small number continued to develop their EMS outside of this time. Also, based on the limited ongoing activity after completing the first continuous improvement cycle, it was apparent that many producers had lost motivation to further develop and implement their EMS.

The additional time and effort required for planning, documenting, monitoring and review was viewed by producers as a significant and immediate burden, especially as they were not accustomed to this. Producer dislike for these activities was further compounded by the occurrence of a long-term drought that required most of their attention, time and energy.

Mid-way through the pilot project, when producers were developing their EMS, they identified a number of benefits derived from this process. Those working in groups found that the discussion and interaction with group members provided opportunities to exchange information on a range of issues and management practices. Nearly all producers, both individuals and members of groups, reported an increased awareness of property risks, and found that objectives and targets provided them with a clear focus and timeframe for property management. However, it was apparent that more than these internal business benefits were required for them to continue EMS implementation.

Benefit-cost evaluation of EMS implementation by pastoral producers

While a comprehensive evaluation conducted with producers trialling EMS in western Queensland provided valuable insights, it is premature, as many of the benefits and costs of implementing EMS have not yet emerged. Implementation is in its infancy and thus more costs will be incurred, and longer term benefits, such as on-ground change and production efficiencies, are unlikely to eventuate for several years.

Due to the simplified nature of the Pastoral EMS, producers spent minimal time (seven days) and money learning about and developing their EMS. Similarly, six days were spent implementing these plans, but most producers were still in the early phase of implementation at the end of the pilot project.

Implementation of the Pastoral EMS had little influence over producers' use of best management practice (BMP). There was little awareness of or ready availability of BMPs for the western Queensland pastoral industry, and instead, producers chose to use their own proven methods of management. This is generally why EMS had little impact on shifting target levels of management for any of the significant on-property issues. Similarly, the Pastoral EMS had little impact on producers understanding and use of catchment management plans, although more producers are now aware of their existence.

Producers that have participated in this pilot project have generally been exposed to more process based planning than ever before. Significantly, the number of producers with written environmental plans is now greater than the number with written business plans. Additionally, EMS also resulted in an increase in the number of producers that monitored and recorded information on their properties. However they still spend less than 25 per cent of their time in the office managing their business.

Interestingly, a high proportion of participating producers surveyed said they would continue with EMS implementation after the project ended. The two main reasons mentioned by producers for continuing with EMS were the documentation benefits, particularly if this helped demonstrate their sustainable practices to others, and improvements in their management leading to improvements in production and the environment.

However, it is unlikely that producers will continue with EMS. Many of them believed that they have and are using an EMS, even though they do not intend to review and revise this in the future. Consequently, they may not have fully understood that continued use of EMS means repetition of the continuous improvement cycle. Also, there were extended periods of time when most producers did not develop or implement their EMS, and without the prompting and assistance provided from pilot project staff they would have stalled all together.

The immediate costs of EMS development are obvious, whereas many of the benefits, such as improved condition of natural resources, regulatory relief, improved access to the natural resource base that producers depend on, and market advantages are not currently available. At best, these will all take several years to emerge, and some may never materialise. Under these circumstances, where costs are obvious and immediate and benefits are risky and distant, producers lost interest in EMS. While they are optimistic about future benefits, on-going implementation is unlikely until these are available.

Environmental labelling and branding of meat

The main purpose of environmental labelling is to differentiate products on the basis of their superior environmental performance, which may result in increased market share or price. However, neither public nor private environmental labels were available for use in the pastoral industry, and for this reason, this pilot project worked with the Australian Koala Foundation and Green Tick Ltd to develop labels that could be applied at the pastoral property level. Two environmental labels arose from this collaboration: Certified Koala Friendly and Green Tick Natural.

Three Damara lamb producers were certified under the Green Tick Natural program, and one organic livestock producer (Pat's Organics) was certified under the Koala Friendly program. These livestock producers then supplied lambs and cattle that were used during two separate environmental labelling consumer marketing trials in Brisbane. The two trials, one with Green Tick Natural certified lamb, and the other with Koala Friendly certified beef, were each run at three retail outlets.

The key finding from these two market trials was that supply chains must first and foremost reliably deliver a product of consistently high eating quality. Without this a meat product bearing an environmental label has no chance of being accepted by consumers. In this respect, a proven supply chain, that of Pat's Organics, was able to consistently deliver a high quality product to the consumer. In contrast, the Green Tick Natural Damara lamb trial involved a mostly new and untested supply chain, and given the short-term nature of marketing trials, there was little time to develop effective and efficient supply chain practices and relationships.

It was evident that success in the market place was much more likely if all members of the supply chain worked together in a close-knit alliance that regarded the meat as a premium product and treated it accordingly. In particular, the retailer played a vital role in actively promoting this premium product to consumers. The retailer also should have a focus on meat quality and free-range or chemical-free meat.

The marketing trials also sought to identify the consumers that were most interested in these environmentally labelled meat products. While definitive descriptions of the target consumer were not possible, indications are that the ideal consumer segment has a high proportion of:

- females;
- older age groups;
- childless or 'empty-nest' households;
- people in the higher income and education categories; and
- organic meat consumers.

This pilot projects meat marketing trials showed that when the necessary ingredients for consumer support can be met, such as full understanding of the environmental labelling concepts, 100 per cent product availability, and high levels of food quality and safety, then an

environmental label may confer market benefits, including new market opportunities and price premiums. However, these are largely restricted to specialised and highly skilled supply chains that supply niche markets.

Ethical wool labelling and market research

Consumer interest in 'environment-friendly' textiles is less pronounced than their interest in 'environment-friendly' foods, largely because of the more direct and immediate benefits associated with the consumption of food. Instead, the main driver for the adoption of more 'environment-friendly' production practices in textile industry supply chains is corporate social responsibility of large retailers and brand companies. These companies wish to protect their reputations by ensuring that their procurement policies are not fostering unethical practices. While environmental performance of suppliers is important, it is not addressed in isolation to other issues, such as workforce conditions and animal welfare.

Consequently, textile markets are more interested in the overall ethics of their supply chains, and for this reason the wool that meets these requirements is called 'ethical-wool'. In recognition of these factors that are of interest to textile markets, ethical-wool was defined by this pilot project as wool that has been produced in accordance with accepted standards for environmental management, employment conditions, fair trade, consumer health and safety, and animal welfare.

The ethical standards most commonly used in the wool industry are Fair Trade, Oeko-Tex, and the Blue Angel, White Swan and Eco Mark eco-labels. In addition to this, a number of retailers and brand companies have their own codes of conduct or procurement policies that they expect their wool suppliers to abide by.

The current and potential future demand for ethical-wool will stay in the eco-niche scale over the next five years. Demand for ethical wool is strongest and growing most in segments where wool is not well placed, such as casual wear, sportswear and intimates. Ethical woollen apparel will ride the positive growth trend in casual wear (particularly sweaters), active wear and intimates, and demand is fairly consistent across regions. For these reasons ethical wool offers limited opportunities for growing Australia's share of the global apparel market.

While consumer demand for ethical wool is low, the Australian wool industry may benefit in the long-term by positioning itself as a supplier of ethically-produced wool, as major retailers, brand companies and late stage manufacturers are likely to increasingly source wool with these credentials.

Overall conclusions

This pilot project customised EMS for the pastoral industry and pastoral producers in western Queensland. The resultant product, the Pastoral EMS, provided producers with a relatively easy entry point for EMS development and implementation. Producers in this industry sector often see little benefit in formal planning, spend long hours working manually on the land with little assistance, and have a strong focus on livestock production. Accordingly, the Pastoral EMS contained minimal planning and documentation requirements, and production and marketing activities were encouraged.

Producer interest in EMS was higher than expected. They were mainly attracted to EMS because they perceived it would strengthen their environmental management, help communicate their sustainable environmental management practices to external stakeholders,

assist them keep abreast of legislative developments, and help them retain access to the natural resource base and markets.

While producers were given considerable guidance on the EMS process to be followed, they were given complete freedom to choose the issues to be addressed within their EMS. Also, they were encouraged to move quickly through the initial development cycle and onto on-ground implementation, rather than become bogged down in training, planning and documentation. Consequently, at that stage the pilot project made no attempt to increase their use of recommended environmental management tools or other general industry BMP. Instead, the pilot project planned to introduce producers to new information and practices after they had completed their first cycle of the Pastoral EMS.

However, by the time the producers had completed planning and documenting their first EMS, most had lost interest and/or motivation to continue using this process. In addition to this, it was apparent that a number of producers viewed the Pastoral EMS as a final and complete package, rather than an on-going process of review and improvement. By the time this pilot project offered producers a range of management system options for building onto their EMS, many of them had become frustrated with planning and documentation. Not surprisingly, they were not interested in these options. For these reasons, the Pastoral EMS did not motivate producers to expand their thinking, goals and practices, as their EMS activities mainly involved what they were already doing or planned to do prior to EMS, and they had no intention of undertaking further planning and documentation.

Generally, the development of EMS stalled, and was restricted to the short periods of time that pilot project staff spent with producers. Without the prompting and assistance provided by the pilot project, many producers would not have completed development and documentation of their EMS. In addition to this, there has been limited implementation of action and monitoring plans at this stage. Other priorities, such as managing their businesses during a prolonged drought, have taken precedence, resulting in EMS being shelved until conditions favour further implementation.

While producers reported internal business benefits such as increased documentation, the use of objectives and targets that focused and provided timelines for property management, and increased monitoring and recording, these were overshadowed by perceived barriers, namely the time and effort required to develop and document plans. They see little value in formal written plans, believing that these soon become out-dated in their changing and unpredictable environment.

Surprisingly, at the end of this pilot project, the majority of producers said they would continue with EMS. This is unlikely given their reluctance to review and revise their EMS while the project was still operating, despite encouragement by pilot project staff to do so. Also, producers nominated market benefits and financial incentives as the main reasons why they would continue with EMS, neither of which will be available in the foreseeable future.

Overall, uptake of EMS by producers in the pastoral industry is dependent on external drivers, such as financial incentives, market benefits, regulatory relief, and on-going personal assistance with EMS development. Producers either do not understand or appreciate the internal business benefits that may arise from the use of a management system, and will not implement EMS for these reasons.

Due to a reliance on external drivers, significant uptake of EMS within the pastoral industry will not occur unless governments, industry and markets develop a national policy framework which makes it possible for producers with a single EMS or related management system to access multiple benefits such as regulatory relief, market advantages, ecosystem service payments and business grants.

While market benefits can arise from EMS and environmental labelling in the fresh red meat sector, these are niche market in scale. As such, these are only available to a small number of highly specialised and dedicated members of supply chains, being those who can consistently deliver meat that has very high levels of eating quality and food safety. At this time, only the more affluent and educated consumers that are concerned about the impact of production practices on meat quality and safety are willing to pay the higher prices associated with the environment labelling of meat.

In comparison, consumer knowledge and interest in the environmental and other ethical credentials of wool is much lower. However, similar to what has happened with fresh food procurement at the retail-chain level in western Europe, NGO challenges to the corporate social responsibility reputations of large apparel retailers and brand companies has caused them to take much more interest in the ethics of their suppliers. Accordingly, the market opportunity for environmentally sustainable and ethically-produced wool is with the large and prominent late-stage apparel manufacturers, brand companies and retailers.

Recommendations

The major recommendations arising from this Pastoral EMS pilot project are presented below.

What is EMS?

Recommendation 1. That major agricultural organisations and relevant government agencies agree on a definition for EMS, and that this definition is restricted to continuous improvement management systems dedicated to environmental management, which are largely consistent with the ISO 14001 standard.

Recommendation 2. Where there is a desire to reduce the emphasis on the environment, address a range of other business issues, and deviate significantly from the ISO 14001 standard, the resultant management system should not be called an EMS. In this respect, industry organisations and governments should develop a more general management system approach, such as the Property Management Systems (PMS) proposal currently being considered as a national framework.

How should EMS be promoted?

Recommendation 3. Promotion of EMS, for the purpose of increasing adoption rates by producers, should target established producer groups, individual champion producers, regional natural resource management groups and other groups that have large networks of producers.

Recommendation 4. Promotion of EMS will be most effective if undertaken by organisations or individuals that producers know, respect and trust, and as much as possible, should occur through personal contact. Promoters of EMS should be people who have high levels of industry and EMS experience, and who can clearly and concisely explain EMS to producers.

How should EMS training be delivered?

Recommendation 5. As with EMS design, training materials and processes must be customised for particular industries and regions, and cater for the different learning styles and other requirements of individual producers.

Recommendation 6. EMS training should be delivered in a facilitated manner to enable producers to learn about EMS while developing it, and be available in their local area.

Recommendation 7. EMS training primarily should occur with groups of producers. However, if there is a need to train individuals then this should be conducted in a structured manner with set meeting dates, agendas and activities, similar to group training.

Recommendation 8. Skilled and professional trainers are required to design the training processes and materials, and to deliver the training. Experts on specific environmental and industry topics should inform the development of training materials, and be available at training meetings to provide technical information, including industry BMP.

Recommendation 9. EMS training should occur in conjunction with other pastoral industry training packages, such as MLA's Edge Network Grazing Land Management program, to provide industry BMP tools and information that informs and adds value to the EMS process.

How to keep producers interested in EMS?

Recommendation 10. To improve adoption and relevance of EMS, its design should be customised for particular agricultural industry sectors and regions.

Recommendation 11. A staged and structured approach to EMS development and implementation, providing producers with a range of entry levels, is required to cater for varying individual, industry and regional circumstances.

Recommendation 12. This staged approach should commence with an environmental self-assessment activity that helps producers identify significant environmental issues and provide guidance on industry BMPs. Priority issues identified through this process would then be addressed by their EMS.

Recommendation 13. Possession of an EMS by producers should be recognised, valued and rewarded by external organisations such as regulators, industry bodies, grant providers, banks, insurers and markets.

Recommendation 14. Relevant government agencies and industry organisations should provide ongoing support and assistance to producers through the delivery of EMS training and development programs and through the establishment of professional and peer networks.

Recommendation 15. Producers should be encouraged to work in groups to develop and implement EMS due to the motivation and other benefits fostered by group work.

Market opportunities for environmentally labelled meat

Recommendation 16. Environmental labelling of meat should only be attempted by supply chains that can consistently produce and supply meat with very high levels of eating quality and food safety to niche markets.

Recommendation 17. Members of environmentally-labelled meat supply chains must be highly skilled, dedicated and disciplined, be aware of their crucial individual roles, as well as recognising and valuing the roles of other members in the chain.

Recommendation 18. The concepts of the environmental label should be clear, concise and easily understood by consumers, and emphasise the close relationship between good environmental management, animal welfare, food safety and eating quality.

Recommendation 19. The retailers of environmentally-labelled meat must actively promote and explain the concepts and benefits of the product to their customers, and place these products in prominent positions within their stores.

Recommendation 20. While target consumers do not fall neatly into any one demographic segment, supply chains should target consumers that patronise premium fresh meat outlets that have an emphasis on quality and safety.

Market opportunities for environmentally or ethically labelled wool

Recommendation 21. The best market opportunities for environment-friendly or ethical wools are with large retailers or brand companies that want to invest in protecting their corporate image by actively promoting their ethical sourcing practices.

Recommendation 22. The cradle-to-grave or lifecycle benefits and costs of wool need to be compared with those of other fibres. In this respect, the cost to growers of collectively improving industry practices needs to be compared with the costs of a deteriorating image as an ethical supplier.

Recommendation 23. Following Australian wool life cycle benefit-cost comparisons with other fibres and wool produced in other countries, the Australian wool industry should re-evaluate the future positioning of wool regarding ethics/environmental issues.

Recommendation 24. Develop a range of voluntary industry best practice standards and auditing options for ethical wool production, to suit a range of market (both supply and demand) requirements.

Recommendation 25. Implement promotional and other strategies to encourage wool grower adoption of voluntary standards and industry best practice, to improve the ethical reputation of the Australian wool industry.-

Recommendation 26. When the Australian wool industry is satisfied with their ethical credentials, educational or promotional strategies are needed to convey this to retailers, brand companies, late-stage manufacturers, and consumers.

1. Introduction

1.1 Background

The impact of agriculture on the natural environment in Australia and overseas is being increasingly scrutinised by regulators, non-government lobby groups, the general community and markets. For this reason, the Australian Government and a number of agricultural industry organisations have promoted the international standard for environmental management systems (EMS), ISO 14001, to Australian primary producers as a mechanism they can use to achieve and demonstrate responsible use of natural resources.

ISO 14001 is a standard that describes a systematic process that a business can use to continuously improve its environmental performance. Apart from specifying compliance with relevant environmental legislation, EMS does not identify environmental issues and performance targets that should be addressed by a business, and neither does it provide guidance on the practices to be used. Instead, a business uses EMS to make these decisions for them selves.

As with most agricultural sectors, EMS implementation within the pastoral industries is still in its infancy. In the year 2000, Meat and Livestock Australia (MLA) commissioned a pilot project to test the application of ISO 14001 EMS in the beef cattle grazing industry. The project involved a number of producer groups that developed and adapted EMS, with the aim of building a system that could be applied across the whole industry. The project concluded that ISO 14001 would not be suitable for most cattle producers due to the large amount of effort and time required for development and implementation, the high cost of audits and the lack of market and other financial incentives (Banney 2002).

However, more recent analyses by Carruthers (2005) indicated that primary producers in a range of agricultural sectors are being increasingly motivated to adopt EMS. Reasons for adopting EMS are:

- a desire to improve the condition of natural resources on a property and the subsequent image of primary producers as natural resource managers;
- market interest in the environmental impacts of food and fibre production;
- government regulatory requirements relating to natural resource use;
- availability of government funding for on-ground natural resource management;
- cost-savings through production efficiencies; and
- the benefits of integrating EMS with other property-based programs to form a whole-of-property management system.

The Department of Primary Industries and Fisheries, Queensland (DPI&F) has also investigated the application of environmental assurance in agriculture (see Pahl 2003, Longworth and James 2004, MacNamara and Pahl 2004, Pahl 2004a, 2004b, King and Pahl 2005, Twyford-Jones *et al.* 2005). This research showed that environmental assurance in various forms, including EMS, has the potential to provide benefits to primary producers and other members of supply chains within the pastoral industries.

As a result, DPI&F and a number of partners decided to develop an environmental certification and labelling project.

1.2 EMS National Pilot Program

DPI&F, in conjunction with a number of commercial companies and a not-for-profit conservation group, sought funding from the Natural Heritage Trust National EMS Pilot Program (http://www.daff.gov.au/ems) through the Australian Government Department of Agriculture Fisheries and Forestry (DAFF). The objectives of this Pilot Program were to:

- develop and assess the value of EMS as a management tool for natural resource management, from the enterprise to the catchment scale;
- assist industry competitiveness and production efficiency; and/or
- assist primary producers to meet emerging market demands for quality and environmental assurance.

The National Pilot Program, which aimed to evaluate EMS across a wide range of agricultural sectors and geographical locations, made a national call for project submissions in late 2002. Approximately 105 project submissions were received, and 16 pilot projects were funded.

The National EMS Pilot Program was managed on behalf of DAFF by URS, an environmental and engineering consultancy firm. This pilot projects experiences with the National EMS Pilot Program and the other pilot projects are described in Appendix 1.

1.3 EMS pilot project

DPI&F, two producer groups, a number of companies operating within meat and wool supply chains such as brokers, processors and wholesalers, and the Australian Koala Foundation (AKF) developed and submitted a proposal for a project titled *On-farm EMS and environmental labelling in the pastoral industries*. In May 2003, funding was received from the National EMS Pilot Program for this project, and work commenced immediately.

The objectives of this pilot project were:

1. To develop, apply and evaluate on-farm EMS for pastoral properties in Queensland;
2. Add value to EMS by building on it with private environmental labelling of pastoral products, including a Koala Friendly label of the Australian Koala Foundation; and
3. Develop and market test meat and wool products bearing environmental labels.

1.4 Objectives of this report

The objectives of this Final Report, in line with the overall objectives of this pilot project, are to describe and discuss the:

- Development of an on-farm EMS for the pastoral industries of western Queensland;
- Recruitment and training of pastoral producers and other members of meat and wool supply chains who participated in this pilot project;
- Development and implementation of EMS by pastoral producers;
- Benefit–cost evaluation of EMS development and implementation in the pastoral industry;
- Development and market testing of meat and wool differentiated by environmental labels; and
- Overall conclusions from this pilot project, including a SWOT analysis and recommendations for future EMS development and implementation.

2. Customising EMS for the pastoral industry

2.1 Introduction

ISO 14001, the international standard for environmental management systems (EMS), describes a step-by-step framework that a business or organisation can use to identify and manage its environmental risks. It is characterised by a continuous improvement cycle consisting of four main phases: plan, do, check, and review.

A number of Australian government agencies and industry organisations are actively promoting ISO 14001 as an environmental management tool for agriculture, resulting in the customisation of this standard to a number of agricultural industry sectors. Several agricultural EMSs are available for public use, and these have been drawn on while developing a pastoral industry EMS by this pilot project.

This chapter begins with a description of the pastoral industry in western Queensland, providing a brief account of the circumstances into which EMS was introduced. It then describes how this pilot project customised EMS for this industry and the resultant product – the Pastoral EMS.

2.2 Profile of western Queensland's pastoral industry

Western Queensland's 90 million hectares of grazing land has a relatively small population of 54,000 people (Office of Economic and Statistical Research 2002, DPI 2001). Productivity in the region is largely dependent on natural resources and nearly all production is exported from the region, being mostly pastoral and mining products.

Pastoral production is largely confined to cattle and sheep, with cattle production being by far the most dominant sector. Conversion of sheep to cattle production has also resulted in the amalgamation of properties into single management units, and has resulted in further reductions in rural population size. The average age of people in the pastoral industry is increasing as young people continue to drift to major regional centres.

The most common management unit is a husband and wife team. They operate extensive properties, and with these increasing pressures, there is less time to enjoy their chosen lifestyle. They do not have full time staff, but employ casual staff or contractors for specific operations such as shearing.

Profitability of pastoral businesses has declined over the past two decades, and low and variable commodity prices have made it difficult to service debt levels and maintain the infrastructure of properties. Relatively low and highly variable rainfall also constrains productivity and property management options.

Currently, western Queensland is experiencing long-term drought, and some areas have not received their average annual rainfall in five years. Accordingly, the main focus of western Queensland pastoralists in recent times has been survival. They are very busy feeding, watering and caring for stock, with expansion in all aspects of their business put on hold until weather and pastures improve.

Generally, pastoral producers in western Queensland do not use formal planning processes and they keep few records, as property management planning, QA, OH&S and food safety

have not been a requirement of doing business. Records of stock numbers, stock movements and shearing are mostly kept in pocket diaries. Hence, producers are unlikely to adopt EMS for the purpose of planning, documentation, record keeping, and continuous improvement of management practices, being the functions that EMS is best suited for.

Overall, the pastoral community feel more heavily regulated than ever before, and are struggling to accept new vegetation management legislation introduced recently by the Queensland Government, the National Livestock Identification System (NLIS), and the banning of mulesing by 2010. Quality assurance programs for wool and meat production were topical in the 1990s, but a lack of incentives and benefits saw many producers fall out of these.

This pilot project was mindful of the environment into which it was introducing EMS, and this influenced the form of EMS that was developed for and promoted to pastoral producers.

2.3 Agricultural EMS resource materials

During the development of an EMS for the pastoral industry, this pilot project drew on a number of agricultural EMSs developed by:

- Department of Agriculture Western Australia (Taylor 2002);
- Meat and Livestock Australia (MLA) (Blackley 2003);
- Agricultural and Environmental Management Systems (Agricultural and Environmental Management Systems (AEMS) – (commissioned by this pilot project);
- Australian Government Department of Agriculture, Fisheries and Forestry (Carruthers 2003); and
- Australian Landcare Management System (ALMS) (Crawford 2003).

These EMS resource materials provided a good general overview of how to develop an ISO 14001 compliant EMS for agricultural sectors. They also provided a number of templates and examples that could be used by producers developing their own EMS. However, it was apparent that two of the five EMS resource materials above were not designed for extensive pastoral industries and all were based on ISO 14001 specific terminology. Relevant and applicable information, templates and examples from these resource materials guided the project team's development of an EMS for the pastoral industry.

2.4 Reviewing EMS applications in agriculture

For the purpose of informing the customisation of EMS for the pastoral industry, this pilot project consulted with a number of people who were experienced with EMS design and implementation in agriculture.

Members of the pilot project team attended a training course and workshop at Wollongbar, delivered by Genevieve Carruthers of the NSW Department of Primary Industries. This provided information on EMS design and implementation that was used to develop this pilot projects EMS. It was concluded that the EMS process should address issues that were relevant to producers in the pastoral industry, as this would potentially be a key motivating factor. Furthermore, it was acknowledged that producers in western Queensland had not been exposed to or required to carry out the same level of planning and/or natural resource management that producers in more intensive agricultural industries have. For this reason, it was considered important that the process of EMS documentation should not be complicated.

Richard Golden, a beef cattle producer near Roma, was involved in MLA's EMS cattle industry EMS pilot project. During the pilot project team's visit, Richard described the key points of his EMS, his motivations for implementing it, the benefits and difficulties of EMS, his thoughts on where this pilot project should focus its efforts, and his overall experiences with EMS. Richard felt that the main focus of this pilot project should be to find out why producers wanted to implement EMS, and then design the EMS so that it achieved their objectives in the simplest way possible. Further to this, Richard commented that a price premium or some other tangible benefit was needed to justify the costs of auditing.

NAPCO (Northern Australian Pastoral Company) was also part of MLA's EMS cattle industry pilot project. Their Property and Environmental Planner, Delphine Bentley, talked to the project team and worked through a simplified EMS example with them. Key points from this presentation included that producers should:

- design their own EMS to gain full benefit;
- write down what they already did and fit this into their EMS; and
- make sure their EMS was easy to use and worked for them before they attempted ISO certification.

For more details on this pilot projects review of agricultural EMSs, refer to '*On-farm EMS and environmental labelling in the pastoral industries'*, mid-term Report (2005).

2.5 The Pastoral EMS

The advice provided above, along with the reviewed resource materials and the pilot project team's own experience with pastoral producers, led them to place greater emphasis on producers completing their first EMS cycle quickly and easily. This was done to encourage further cycling, rather than attempt a full ISO 14001 EMS on the first pass and risk failure.

To this end, the EMS promoted to the pastoral industry by this pilot project had seven elements, being the more action-orientated elements of the ISO 14001 standard. Consequently, the amount of documentation required was minimised. This particular style of EMS was titled the 'Pastoral EMS' due to its specific customisation to western Queensland pastoral industries. The seven elements of the Pastoral EMS are shown in Figure 2.1.

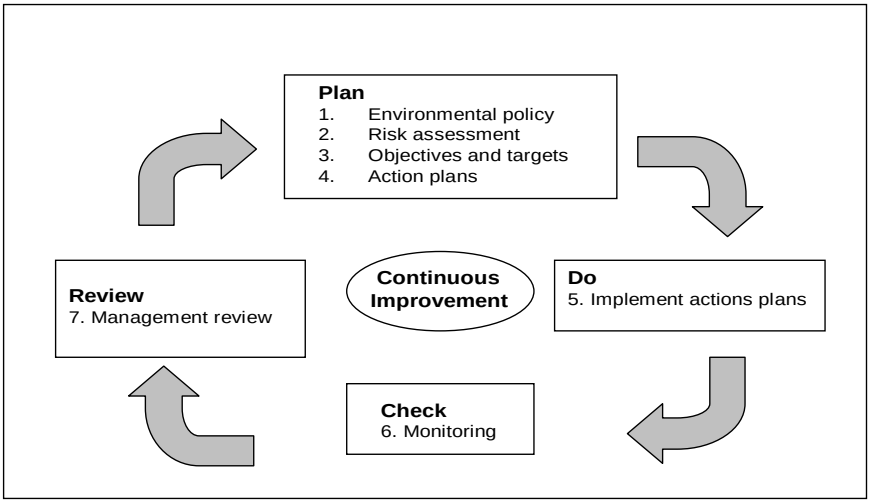


Figure. 2.1. The seven-element Pastoral EMS.

To encourage ownership of and commitment to EMS by pastoral producers, the Pastoral EMS was designed to be flexible with regard to both structure and application. This gave producers

the flexibility of building in the amount and type of content that they felt was necessary, and the capacity to customise the EMS process to suit their management.

The Pastoral EMS developed by the pilot project was then sent out for review by 15 people who had pastoral industry and/or EMS experience. The reviewers provided mostly positive feedback and constructive advice for improving the Pastoral EMS. Generally, they were satisfied with the quality of the product, found the EMS straightforward and easy to follow, including the language and terms used, and thought the examples provided would be a good reference for producers writing their own EMS. Most reviewers thought that the explanations were clear and focused on both production and environmental outcomes, although a number of the producer reviewers thought that the explanations and examples were overly focused on the environment. The producer reviewers also offered practical advice on the example environmental policies, believing them to be bureaucratic in style, and included terms such as 'social responsibility' and 'remnant vegetation' that are rarely used by producers.

Two of the reviewers experienced with ISO 14001 EMS questioned the simplicity of the Pastoral EMS, as they preferred it to have all elements of the ISO 14001 standard. Also, even though some elements of ISO 14001 were present in the Pastoral EMS, these were not always to certification standard, as they omitted requirements that were seen by the pilot project team as being less relevant to producers in western Queensland, such as a commitment to preventing pollution in the environmental policy and making the policy publicly available. There was also some question about whether the terminology of the Pastoral EMS should vary from that in ISO 14001, such as changing 'aspects and impacts' to 'risk and cause'. However, it was decided to keep the terminology as simple, familiar and clear as possible, and as such, the terms 'risk' and 'cause' were retained.

Table 2.1 below compares the elements of the ISO 14001 compliant EMS (AS/NZS ISO 14001: 2004) with those of the Pastoral EMS, although it should be noted that some of the elements of the Pastoral EMS do not fulfil all of the requirements of the equivalent elements of ISO 14001. Further differences between an ISO 14001 compliant EMS and the Pastoral EMS are that the Pastoral EMS did not require producers to develop a plan for their legal and legislative requirements. Instead, producers were only asked to be aware of and comply with their legal requirements. Further to this, during implementation, the Pastoral EMS only required producers to implement their action plans and sign that they have been completed, whereas a fully compliant ISO 14001 contains more elements in the 'do' phase of the cycle. The monitoring or 'check' phase of the fully compliant ISO 14001 EMS is also more complex than the Pastoral EMS. The Pastoral EMS did not specify what sort of monitoring was required by pastoralists, and it did not require them to evaluate the compliance of their actions with their action plan.

The Pastoral EMS was then developed into a full producer workbook: *The Pastoral EMS: A guide for producers.* This guide was provided to pastoral producers who were considering participating in the pilot project (see Chapter 3), and it was the primary tool used for EMS training and development, as discussed in Chapters 4 and 5 of this report respectively.

Table 2.1. A comparison of the elements of ISO 14001 and the Pastoral EMS.

Continuous improvement cycle	ISO 14001: 2004 EMS requirements	Pastoral EMS	Continuous improvement cycle
Plan	Environmental Policy	Environmental Policy	Plan
	Environmental Aspects	Risk Assessment	
	Legal and other requirements		
	Objectives, targets and programme(s)	Objectives and Targets	
		Action Plans	
		Implement Actions Plans	Do
Do	Resources, roles, responsibility and authority		
	Competence, training and awareness		
	Communication		
	Documentation		
	Control of documents		
	Operational control		
	Emergency preparedness and response		
Check	Monitoring and measurement	Monitoring	Check
	Evaluation of compliance		
	Nonconformity, corrective action and preventative action		
	Control of records		
	Internal Audit		
Review	Management Review	Management Review	Review

2.6 Discussion

The pilot project team, decided that, based on their experience with producers, their review of EMS resource materials and advice provided to them, pastoral producers in western Queensland were not ready for and would not particularly benefit from the introduction of a fully compliant ISO 14001 EMS. As a consequence of this decision, much consideration, research, and consultation went into the development of an alternative EMS that suited these producers.

The decision by the pilot project team to initially adopt a simple and flexible form of EMS and not commence with ISO 14001 is consistent with a number of other studies (Ridley *et al.* 2003, Thomson 2004b, Anon 2005c, Ridley 2005, Thomson 2005, Huhn *et al*. 2005, Seymour *et al.* 2006). The adoption of a simple and flexible approach to EMS is also consistent with Williams *et al*. (2000) who argued that for an EMS to be successful within a small business, it must be simple, inexpensive, contain minimal paperwork and not take time away from regular working commitments. Attainment of a compliant ISO 14001 EMS requires a level of

commitment to training, documentation, planning and record keeping that pastoral producers are not accustomed to, and it was not clear that this commitment would result in significant benefits for them, which was a conclusion also reported in Thomson (2004b, 2005). The significant time and paper work required, the lack of obvious incentives, and the high cost of audits are reported barriers to the implementation of a fully ISO 14001 compliant EMS in the pastoral industry (Banney 2002).

Further to this, Banney (2002) reported that for EMS adoption to be successful in the beef industry, a staged approach was necessary. Taylor (2001), Andrew *et al.* (2005), Anon (2005c), and Seymour *et al*. (2006) also confirm this, noting that it would be difficult for producers to use ISO 14001 as a starting point. Pahl and Yeoman (2005) also acknowledged the need for a staged approach, but note that it may fall short of accommodating the diversity of people and circumstances found in the pastoral industry. In contrast, Cannon (2005) stated that ISO 14001 was not as difficult as many have been led to believe, noting the simple methods of ISO 14001 implementation demonstrated by a number of fishing and aquaculture businesses.

In relation to the 15 EMS pilot projects undertaken within the National EMS Pilot Program, Thomson (2004b) reported that only five of them chose to implement ISO 14001. One of these, the Australian Landcare Management pilot project, recommended ISO 14001 as it allowed producers to receive greater national and international recognition, as well as being an established and standardised system (Gleeson *et al.* 2004). Thomson (2004b) further reported that some industries such as seafood chose ISO 14001 as they have a greater need to publicly demonstrate their environmental credentials. In contrast, the broad-acre pastoral industries are experiencing less public pressure. Accordingly, Seymour and Ridley (2005) note that there were few drivers for EMS adoption in these sectors, and other authors (Banney 2002, Huhn *et al.* 2005, Seymour *et al.* 2006) have suggested that a fully compliant ISO 14001 approach was not practical for most family farms.

For all these reasons, a streamlined form of EMS, focusing on the main action-oriented elements of the ISO 14001 standard, was developed and offered to the pastoral industry. This approach was taken to make it easier for pastoral producers to gain positive experience with the continuous improvement cycle, and to apply this to various facets of their business.

Also highlighted by Thomson (2004b) were the benefits of integrating EMS with other business management systems including, QA, OH&S and whole farm planning. The flexibility of the pastoral EMS allowed for this integration to occur, as it enabled producers to add additional programs at their own discretion. In this respect, a number of options were offered to producers (see Chapter 5, Section 5.3.2).

2.7 Conclusion

It is recommended that the introduction of EMS to the pastoral industry sector should commence with a simplified version of the ISO 14001 standard that is more focused on the action-oriented elements. Accordingly, this pilot project developed a seven-element Pastoral EMS, which after a relatively small amount of planning and documentation, allowed producers to quickly move into the implementation phase. This approach was taken so that producers could gain an understanding of the EMS process without being overwhelmed by training, planning and documentation.

It is also recommended that producers be given the freedom to adapt EMS to their own management style and business circumstances, thereby achieving ownership and business relevance. In this respect, it is important that producers be encouraged to address the issues most important to their business, integrate EMS with their daily on-property activities, and work at their own pace.

Finally, it is recommended that EMS implementation should occur through a staged approach. The management system provided by the Pastoral EMS is a suitable starting point which can be expanded to meet the requirements of a range of pastoral industry schemes, such as quality assurance (QA), Livestock Production Assurance (LPA) and occupational health and safety (OH&S).

3. Recruitment of pastoral industry partners

3.1 Introduction

The recruitment of pastoral producers was the most crucial component of this pilot project, as EMS could not be trialled and evaluated without them. At the outset, this pilot project sought to establish meat and wool demand chains that would act as drivers for the adoption of EMS and environmental labelling by pastoral producers. However, delays in the establishment of meat and wool demand chains meant that this driver could not be used as the principal mechanism for recruiting producers from western Queensland. Instead, promotion of better business management, recognition for good land and livestock management practices, and assistance with EMS implementation were the messages most used to recruit producers.

A number of programs or projects that have recruited producers into EMS and other natural resource management activities have used a range of effective methods (see Barker *et al.* 2001, Trompf and Sale 2001, Reid and Ridley 2005). Generally, these authors have all reported telephone marketing, individual visits to producers, brochures, presentations, newspaper articles and radio advertisements as useful practices in gaining producer interest.

This chapter describes the methods and results of recruitment of commercial companies and pastoral producers into this pilot project. Also presented are the results of a survey conducted at the time producers joined the pilot project.

3.2 Commercial company involvement in this pilot project

This pilot project initially recruited a number of commercial companies that were involved in the trade of meat and wool, including brokers, producers, processors and wholesalers. These companies, including two producer groups, met with DPI&F to design this pilot project, and to play major roles in the establishment of demand chains for ‘environment-friendly’ meat and wool. The term demand chain implies that consumers and/or other customers provide the impetus for the establishment of the chain of suppliers that together deliver the required product to the end user. These demand chains were then meant to become the principal tool for recruiting pastoral producers that would implement EMS on their properties.

While the commercial partners had varying reasons for being involved in this pilot project, they all wished to participate in the development and application of environmental labelling or a related sustainable production and marketing program. However, for a variety of reasons, the high levels of interest expressed by these organisations did not always translate into the development of demand chains for ‘environment-friendly’ products.

Pat’s Organics in association with its supply chain companies and the Australian Koala Foundation (AKF), and the Damara lamb producers in association with their supply chain partners and Green Tick Ltd, were the only businesses or organisations that were actively involved in the trade of ‘environment-friendly’ products during this pilot project.

Pat’s Organics produced Certified Organic cattle, lambs and goats. These are processed at a local abattoir, and then the carcasses are transported to a wholesaler in Brisbane who then distributes these to a number of retail outlets. Similarly, the Damara lamb producers from western Queensland also had relationships with a wholesaler and retailer in Brisbane. Lambs were processed locally and the carcasses delivered to the wholesaler.

The AKF and Green Tick Ltd. owned environmental labels that they made available to Pat' Organics and the Damara lamb producers. Fresh meat carrying these environmental labels was trialled in several retail outlets in Brisbane by this pilot project. These supply chains, the two environmental labelling organisations, and the environmental labelling trials are described in more detail in Chapter 7.

Eight other companies, Australian Country Choice, BWK Elders, EcoFoods, Elders (wool), Heifer Creek Holdings, Naturally Australian Food, Overseas Game Meat Export, and Traprock Wool, were initially involved in setting up this pilot project, but for a variety of reasons they were unable to trade in environmentally-labelled product. This unfolded during the first year or two as the pilot project and these organisations sought to develop and establish the demand chains that would draw meat and wool products from the EMS producers in western Queensland.

Relatively new organisations such as EcoFoods and Heifer Creek had very well developed plans for sourcing and marketing 'environment-friendly' products, but were still in the establishment phase. Development of these companies occurred more slowly than anticipated, and while EcoFoods sold vegetables to customers in Brisbane, neither company was able to establish meat demand chains involving the Pastoral EMS producers.

Overseas Game Meat Export (OGME) was a well established company that sourced, processed and marketed a range of kangaroo meat products. OGME and this pilot project developed and were ready to trial a model for pastoral producer involvement in their Naturoo supply chain. However, OGME experienced financial difficulties and were unable to proceed with this activity.

Likewise, Naturally Australian Food was a well established company with plans to supply 'naturally-produced' beef into the United States. They were to provide Pastoral EMS producers with specifications for the production of 'naturally-produced' beef, including the need for documentation of on-farm practices that substantiated their marketing claims. However, very early in the project Naturally Australian Food also experienced financial difficulties and were unable to proceed with their plans.

Australian Country Choice (ACC) is a well established and successful integrated beef supply chain company, dedicated to supplying Coles supermarkets with beef. They were early adopters of ISO 14001 at their main processing plant, and sought assistance from this pilot project with implementation of EMS on one of their beef property groups in south-west Queensland. While resources required by ACC were procured by the pilot project and offered to them, ACC were unable to sign a memorandum of understanding, and consequently their involvement with the pilot project ceased.

Traprock Wool, a large and successful group of fine-wool growers in southern Queensland, were also well advanced with the development of an EMS for their producer marketing group. At the commencement of the pilot project they sought assistance with the implementation of this EMS by members of their group. This pilot project did not have the resources that Traprock Wool required for group implementation, and subsequently they decided to cease their involvement in the project.

Elders are one of the largest wool-broking companies in the world with 400 branches and agencies spread across Australia. They are also a major partner in the company BWK (Bremer

Woll-Kammerei AG) Elders, which is the world's second-largest wool processor. However, these companies do not purchase wool directly from growers, and instead process wool on behalf of other clients. Neither Elders nor BWK Elders had customers who were placing orders for 'environment-friendly' wool, although they believed that interest might grow over the next few years. While they both wished to develop a reputation and capacity to supply wool produced by sustainable supply chains, they were unable to establish these due to a lack of market demand. Consequently, Elders and BWK Elders also had little involvement in supply chains associated with the pilot project.

Consequently, it became clear mid-way through this pilot project that demand chains for 'environment-friendly' meat and wool would not be available, and that these could not be used as drivers for the recruitment of producers willing to implement and trial EMS. For this reason the pilot project then sought to recruit producers on the merits of EMS alone.

3.3 Producer recruitment

The sections below summarise the key recruitment activities of this pilot project. These address the methods employed to provide EMS information to producers, their recruitment into the pilot project and the results of an initial survey completed by them. For more details on the recruitment of producers, refer to Anon (2004), Butcher and Yeoman (2004) and the *On-farm EMS and environmental labelling in the pastoral industries*, mid-term report (2005).

Given the large geographic area of western Queensland, it was decided to hold two EMS information days, one in Charleville and the other in Longreach. These information days were the principal forums through which the project was to provide information on EMS and recruit producers. Promotion was seen as being the key to achieving attendance by producers at the information days, and the large geographic area of the target audience meant that a wide variety of advertising mediums were required.

When the two information days were completed, the challenge for the project was to consolidate and capitalise on the interest generated. It was necessary to act quickly and decisively while the producers were still motivated to implement EMS, and while EMS and related concepts were fresh in their minds.

3.3.1 Promotion of the EMS information days

Much effort was invested in the promotion of the EMS information days, as recruitment of producers who would develop and implement EMS was the most crucial component of this pilot project. Widespread promotion of EMS inviting producers to attend the information days included the following:

- displays at agricultural shows (Tambo, Mitchell, Longreach, Charleville, Cunnamulla and Isisford);
- advertisements and interviews on commercial and ABC radio stations in Charleville and Longreach;
- articles in DPI&F newsletters (Mulga Line and Central Western Newsletter);
- articles and advertisements in newspapers (Western Sun, Queensland Country Life, Longreach Leader and the Western Times);
- mail, email and fax invitations were sent to properties that had participated in various industry, Landcare and Best Prac groups (Australian Wool Innovation funded wool producer groups) in the past; and

- 107 producers recommended by experienced DPI&F staff, stock and station agents, consultants and natural resource management groups as those most likely to be interested in EMS, were personally contacted by telephone.

The main messages during the promotional campaign were:

- EMS would help gain external recognition for good land and livestock management practices;
- better business management could be conducted through an EMS; and
- there was an opportunity for livestock producer groups to receive training in EMS.

Through this promotion, producers from over 1500 properties received information about the Pastoral EMS and an invitation to the EMS information days.

3.3.2 Running the EMS information days

Facilitated information days were held during May 2004 at Charleville and Longreach. The information days introduced producers to the DAFF EMS National Pilot Program, EMS generally and the Pastoral EMS. It also provided producers with examples of EMSs used in other primary industry sectors. The presentations and discussions were designed for participants to gain an understanding of EMS, and express their views, including concerns and opportunities for EMS. Due to the promotional campaign, 80 participants, including 53 producers from 37 properties, industry representatives, the media, DPI&F staff and presenters attended the two EMS information days (Table 3.1).

Table 3.1. Participants at the Charleville and Longreach EMS information days.

Participant type	Charleville participants	Longreach participants	Total
Producers (properties)	35 (23)	18 (14)	53 (37)
Industry representatives	2	3	5
Media	1	1	2
DPI&F staff and presenters	11	9	20
Total	49	31	80

Producers' thoughts on the information days and EMS were captured in feedback sheets, completed by 41 producers. Twenty-seven of these producers attended the information days as a result of personal contact (via telephone invitation).

Producer impressions of both the Charleville and Longreach information days were positive with regard to both the presentations and overall value of the day (see Table 3.2). Almost three-quarters of producers (30/41) found the information days valuable, giving them a ranking of 4 or 5. Similarly, just over two-thirds (27/39) found the presentations interesting, again giving them a ranking of 4 or 5. Despite this, 16 of the 41 producers still felt that they did not have a good understanding of EMS at the end of the information days (with a ranking of 3 or less) (Table 3.2).

Table 3.2. Producer impressions of the EMS information days at Charleville and Longreach.

Ranking of the overall information days					
	A waste of time	◄———		———►	**Really valuable**
Ranking	1	2	3	4	5
No. of producers	0	2	9	18	12
Ranking of the presentations					
	Tedious	◄———		———►	**Excitingly presented**
Ranking	1	2	3	4	5
No. of producers	1	1	10	25	2
Understanding of EMS					
	Still don't know what EMS is	◄———		———►	**Have a good understanding of EMS**
Ranking	1	2	3	4	5
No. of producers	0	5	11	17	8

Over half of the producers (25/41) indicated they were very interested in joining the pilot project and implementing EMS on their property, giving this a ranking of 4 or 5 (Table 3.3). In contrast to this, only five producers were not interested, ranking this at 1 or 2.

Table 3.3. Level of interest by producers at the EMS information days in establishing an EMS on their property.

	Not interested at all	◄———		———►	**Yes, will sign up now**
Ranking	1	2	3	4	5
No. of producers	1	4	11	17	8

3.3.3 Pastoral producers recruited into the project

The promotion of EMS, including the EMS information days at Charleville and Longreach, resulted in producers from over 100 properties expressing interest in EMS. During mid 2004, visits were made to 36 individual producers and seven producer groups that had expressed interest in EMS. During these visits, producers were provided with an introduction to the Pastoral EMS, they were invited to join the pilot project, and upon joining they were asked to complete the baseline survey.

3.3.4 The EMS National Pilot Program baseline survey

The EMS National Pilot Program baseline survey developed by URS was completed by those properties wishing to join the EMS pilot project. These were usually completed by producers during the introductory visit or the first training meeting.

The baseline survey recorded individual producer reasons for becoming involved in EMS and their current management practices. Producers from 39 properties completed this survey, with the results presented below.

Reasons why producers became involved in EMS

Producers were asked why they became involved in EMS and what had motivated them to do so (Baseline Survey question 6). They were given a list of 14 reasons and asked to rank these on a scale from 'strongly disagree' to 'strongly agree' (see Table 3.4). The large majority of producers (36/39) either 'agreed' or 'strongly agreed' that wanting to 'learn more about EMS' was a reason for becoming involved in the EMS pilot project. Also, most producers (34/39) either 'agreed' or 'strongly agreed' to wanting to 'keep up to date with legal developments in environmental management and farming', and similarly, most producers (35/39) got involved because they 'agreed' or 'strongly agreed' that an EMS could help 'show people outside their industry that they manage sustainably'. Many producers (33/39) also noted that they 'agreed' or 'strongly agreed' that an EMS may 'help strengthen environmental management in their enterprise'. In contrast to this, a high proportion of producers (26/39) were 'unsure' whether EMS would 'reduce their costs of production'.

Producers were then asked to identify the three most important reasons (from the list in Baseline Survey question 6), in order of their significance, for why they got involved in EMS (see Table 3.5). The top two reasons for why producers got involved in EMS were, to 'show people outside the industry that they manage sustainably' (11/39) and to 'strengthen environmental management within their enterprise' (9/39).

Table 3.4. Reasons producers became involved in the EMS pilot project.

I got involved in this EMS pilot project because……	**Strongly disagree**	**Disagree**	**Unsure**	**Agree**	**Strongly agree**	**Mean**
	1	**2**	**3**	**4**	**5**	
I want to learn more about EMS	0	0	3	26	10	4.2
I want to keep up to date with legal and legislative developments about environmental management and farming	1	1	3	22	12	4.1
I believe that having an EMS will help my business to get better access to government services	0	1	13	16	9	3.8
I believe that having an EMS will help my business to get better access to government funding	1	1	12	16	9	3.8
I believe that an EMS may help me to show people outside the industry that I/we manage sustainably	0	1	3	16	19	4.3
I believe that an EMS may help me to have continued access to the natural resources on which my enterprise is dependent	1	2	7	19	10	3.9
I believe that an EMS may help strengthen environmental management within my enterprise	0	2	4	19	14	4.2
I believe that an EMS may help me to reduce my costs of production	0	4	26	5	4	3.2
I believe that having an EMS may help my business improve access to current and/or potential markets	0	3	7	19	10	3.9
I believe that having an EMS may make it possible to ask a premium for my products in the market place	0	2	16	15	6	3.6
I believe that having an EMS may make it possible to improve productivity through increased yields	0	4	18	12	5	3.5
I believe that an EMS may help to plan more effectively for adverse seasons	0	4	13	13	9	3.7
It is an opportunity for me to strengthen my business management capabilities	0	1	9	19	10	4.0
I believe that an EMS may help me to make my business (rather than my products) more marketable to potential buyers	1	3	9	17	9	3.8

Table 3.5.The three most important reasons why producers became involved in the EMS pilot project.

I got involved in this EMS pilot project because……	**Top three reasons for involvement**		
	Primary significance	**Secondary significance**	**Tertiary significance**
I want to learn more about EMS	2	1	0
I want to keep up to date with legal and legislative developments about environmental management and farming	2	5	3
I believe that having an EMS will help my business to get better access to government services	2	2	6
I believe that having an EMS will help my business to get better access to government funding	0	2	4
I believe that an EMS may help me to show people outside the industry that I/we manage sustainably	11	5	4
I believe that an EMS may help me to have continued access to the natural resources on which my enterprise is dependent	2	3	5
I believe that an EMS may help strengthen environmental management within my enterprise	9	3	3
I believe that an EMS may help me to reduce my costs of production	0	0	0
I believe that having an EMS may help my business improve access to current and/or potential markets	4	4	2
I believe that having an EMS may make it possible to ask a premium for my products in the market place	1	1	3
I believe that having an EMS may make it possible to improve productivity through increased yields	0	1	1
I believe that an EMS may help to plan more effectively for adverse seasons	2	2	3
It is an opportunity for me to strengthen my business management capabilities	2	5	3
I believe that an EMS may help me to make my business (rather than my products) more marketable to potential buyers	1	5	2
Other	1	0	0

Property management
Producers were asked a series of questions relating to their property management. These included time spent working in and managing their property, what kinds of plans they used, any monitoring they did and their knowledge of their regional catchment management plan.

Producers were also asked about the total amount of time they spent working manually and in their office (Baseline Survey question 8). On average, they spent a total of 64 hours per week, although this ranged from 25 to 100 hours. They were then asked what proportion of their time was spent in an office (Baseline Survey question 9). Just over one-third of producers (15/39) spent less than 25 per cent of their time on office work, the same number (15/39) spent between 25 and 50 per cent of their time, and less than one-quarter (9/39) thought they spent over 50 per cent of their time.

Next, producers were asked what type of plans they used to run their property (Baseline Survey question 13), with the results presented in Table 3.6. For each type of plan, such as a business plan, producers were asked if this was a 'formal written plan', or a 'plan in their head with minor documentation', or 'no structured plan' at all. Those producers with formal written plans were also asked if they referred to this at regular intervals or not at all, and if they updated it on a regular basis or not at all. In relation to business plans, two-thirds (26/39) noted that this was 'a plan in their head/some documentation', while 12 said that this was a 'formal written plan'. Of the 12 producers with a 'formal written plan', all 12 said that they 'referred to this at regular intervals', and they all said they 'updated this on a regular basis' (Table 3.6). The responses for an environmental management plan were similar, but with slightly less 'formal written plans'. In contrast to this, fewer producers had formal written QA and OH&S plans, and many did not have a plan at all for these issues.

Table 3.6. Summary of the types of plans producers use to run their property.

Type of plan	**No structured plan**	**Plan in my head/some minor documentation**	**Has formal or written plan**	**Use of formal or written plans**			
				Referred to at regular intervals	**Not referred to at all**	**Updated on a regular basis**	**Not updated at all**
Business plan	1	26	12	12	0	12	0
Environmental management plan	5	25	9	9	0	9	0
Quality assurance plan	15	20	4	4	0	4	0
Occupational health and safety plan	15	21	3	3	0	3	0

The 39 producers were then asked if they do any environmental monitoring (Baseline Survey question 16). One producer said that they had no monitoring system at all. Eleven producers do their monitoring 'in their head' and eleven monitor 'informally with notes in their diary'. Ten producers said that they had a 'system of their own methods and standards that included

written records, data or photo points', and six thought they had a 'formal monitoring system incorporating accepted methods and standards'.

The issues monitored by producers including, pasture, weeds, vegetation regrowth and encroachment, and stock numbers and condition are shown in Figure 3.1. Although stock numbers and condition are not forms of environmental monitoring, some producers felt that this was the one thing that they monitored regularly – these producers also documented other types of environmental monitoring in their response.

Pasture monitoring is the most common monitoring activity with 21 of the 39 producers monitoring this (Table 3.1). Of these 21 producers that monitor pasture, three use GRASS Check annually, which is a formal pasture assessment tool, where producers observe ground cover and pasture height, identify species present at their site and take a photo (see Forge 1994). A further six producers use a photo site only to monitor their pasture, one uses their safe carrying capacity data to monitor this, and the remaining 11 producers visually monitor their paddocks. In addition to pasture monitoring, 11 of the 39 producers also monitor weeds and nine monitor vegetation regrowth and encroachment.

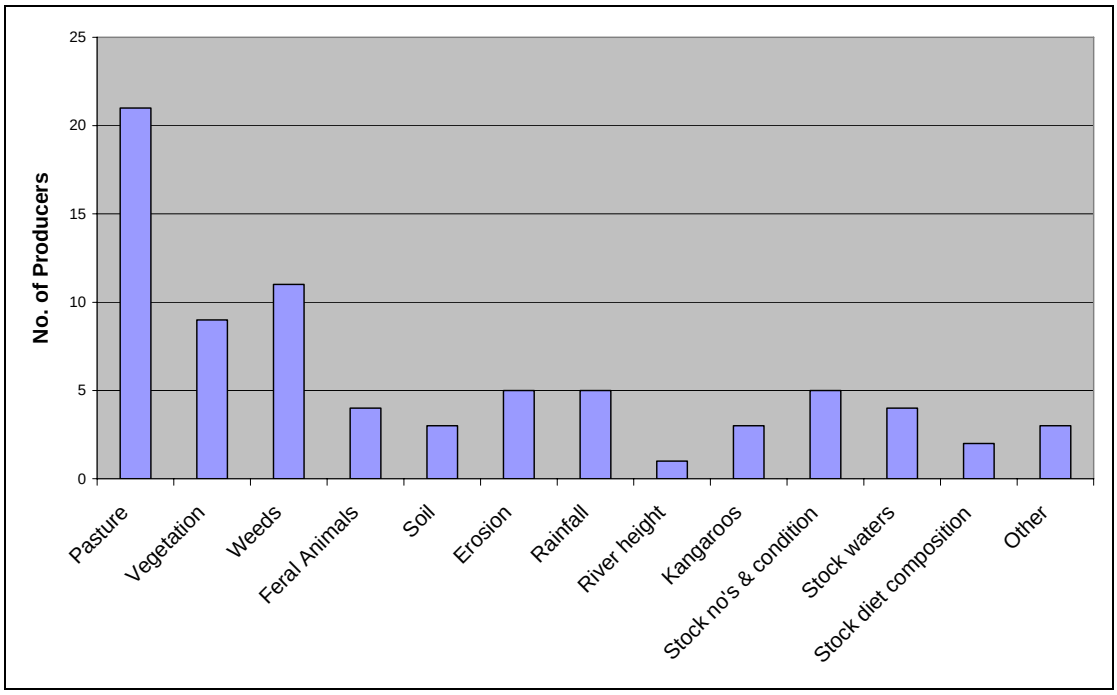


Figure 3.1. The issues monitored by producers as part of their property management.

Producers were then asked if they knew if a catchment or natural resource management plan was in place for their area (Baseline Survey question 17a). Twenty-four of the 39 producers said they were aware of a catchment or natural resource management plan for their region. These 24 producers were then asked how familiar they were with the contents of these plans (Baseline Survey question 17b) and how important they think the management of their property is in contributing to these plans (Baseline survey question 17c). Fourteen of these 24 producers felt somewhat familiar with the catchment management plan and 10 said they were not at all familiar. Again, of the 24 producers that were aware of a catchment plan, five thought that the management of their property made a large contribution to the plan, six thought there was some contribution, seven thought a small contribution, three said no contribution and three gave no response.

3.4 Discussion

This pilot project and its commercial partners have struggled to establish demand chains for meat and wool that would drive the adoption of EMS and environmental labelling by pastoral producers. The niche market nature of the customer base for 'environment-friendly' meat and wool made it difficult for medium to large sized companies to identify, establish and maintain trading relationships. Many commercial companies were approached, but very few were able to assist the pilot project link EMS producers to markets.

In contrast to this, producer involvement in the pilot project was much higher. Producers from over 100 properties expressed interest in EMS, and of these producers from 39 properties decided to adopt EMS. The following discussion covers commercial company involvement in this pilot project and the recruitment of pastoral producers.

3.4.1 Learnings from commercial company involvement

Naturally Australian Foods, OGME, Elders and BWK Elders, are large and traditional commodity traders, and as such, struggled to accommodate the more specialised and possibly more expensive eco-products that were of interest to this pilot project. Like a number of other agricultural sectors, these companies are in an industry where long-term survival is generally based on selling large amounts of product at a competitive price (Pahl 2006). Markets need these products, and will continue to buy them providing they can obtain them at the right price. However, there is a downside to this, where the constant cost-price squeeze can force businesses out of the market (Pahl and Sharp 2006). This happens when competitors are able to provide an equivalent product at a reduced price, or when circumstances beyond the control of the company forces up the price of raw products. Naturally Australian Foods and OGME were probably both victims of these circumstances. Both companies were in the process of shifting the focus of their business to value-added product lines that would move them away from the 'sell at lowest price' trading model, but ceased trading before the value of these new lines could be determined.

For a large company, the supply of small quantities of specialised product may also be a distraction from its main business. Due to the small customer base for 'environment-friendly' products, companies that produce and/or trade in large amounts of commodities such as meat and wool must target the mainstream consumer. These consumers generally do not purchase products that carry an environmental label or claim, as they are unfamiliar with them, do not understand or value the claims, and are suspicious of both the environmental claims and the quality of the product (Bougherara and Grolleau 2004, MacNamara and Pahl 2004, Pahl 2006, Pahl and Sharp 2006). Under these circumstances, most consumers are not prepared to purchase these products, and they certainly will not pay a premium for them.

Pat's Organics and the Damara lamb producer group were small and specialised supply chains that had the desire, opportunity and capabilities to produce and market 'environment-friendly' meat. Given that they were small companies and did not have large volumes of meat for sale, environmental labelling provided them with an opportunity to add value to what were otherwise regarded as commodities or products from anonymous farmers. Certification at the farm level makes the farm and the farmer more visible to the consumer, places more value on the production practices used on the farm, and therefore may enable producers to negotiate higher returns for their products (Pahl and Sharp 2006).

Hence there are good reasons for small-scale commodity producers to attempt to add value to their products by differentiating them through environmental labelling and/or branding. Small

companies are also better placed to supply the very limited but discerning customer base for 'environment-friendly' products. This is a small company's main and perhaps only business, it produces no more product than the limited customer base requires, and it is able to devote its full attention to the supply and promotion of this specialised and high quality product.

However, companies that base their businesses on the supply of specialised premium food and fibre to niche markets face constant challenges. These companies are small, their costs per unit volume of product are high, and their continued operation relies on delivery of a very high quality product to loyal customers that have significant disposable income (Pahl 2006). This level of dependence and specialisation makes it difficult for a company to establish itself, and may explain why EcoFoods and Heifer Creek struggled to become established in the market place. It is very difficult for companies that specialise in 'environment-friendly' food and fibre to become established and continue trading when there are very few consumers who will consistently pay premium prices for these products.

3.4.2 Recruitment of pastoral producers

As it was not possible to promote market benefits as a reason for pastoral producers to adopt EMS, the pilot project team promoted other advantages of EMS. This included using EMS as a tool for improving business management and as a tool that could help with gaining recognition for good land and livestock management practices. The success of this promotion was evident in the large number of producers who expressed interest in EMS. The high initial interest in EMS from western Queensland producers is also consistent with Pahl (2003) who reported that over 70 per cent of rangeland producers were interested in some type of environmental certification.

Very few studies have reported how producer groups or individuals have been selected or recruited into agricultural EMS projects. However, Huhn *et al.* (2005) and Reid and Ridley (2005) advised that existing supply chain or landcare/catchment groups could be targeted and used as the basis for recruiting producers into EMS. For this pilot project the information days proved to be the most beneficial method to recruit producers as two-thirds of producers implementing EMS attended these days. However, personal contact both before and after the information days was also very important in achieving producer involvement in the project. Collins *et al.* (2001) also recruited producers using personal contact and prominent or champion producers.

Thomson (2004b) reported that the level of interest and uptake of EMS has been greater where EMS has been led by an industry group. This is supported by Loveday (2003) and Watson and Galligan (2005) who reported that in industries such as seafood and cotton, the respective peak industry bodies were driving the recruitment and uptake of EMS due to the pressures felt by growers from the community and government. In the case of this pilot project, no relevant industry body had encouraged producers to adopt EMS.

3.4.3 Why were producers interested in EMS?

Producers were interested in EMS, not because they knew its structure or content, but because they understood that it was some form of standard for environmental management. At that early time they assumed that EMS was a benchmark for good environmental management, expecting it to contain mandatory performance criteria or practices (Butcher and Yeoman 2004). As this was their first impression, they found it hard to understand that EMS was a process, and that they determined the performance criteria and practices.

The feedback from the information days and the baseline survey indicated that many producers saw the potential for EMS to be used as a vehicle for educating the wider community about their good land management practices (Butcher and Yeoman 2004). Many producers appeared to believe that urban communities had a poor opinion about the environmental management practices of the pastoral industry, and this was a source of frustration for them. It is now clear that many producers were attracted to EMS because they believed that they could use it to demonstrate to people outside their industry (such as government and the wider community) that they were sustainable. 'To show sustainable management' was also the single most important reason for producer involvement in EMS across all 15 pilot projects (Thomson 2004a).

The desire to demonstrate sustainable land management was also likely to have been due in some part to the recent release of the draft State Rural Leasehold Strategy in 2003 (NRM 2003). This document contains draft policy on the requirements for renewing pastoral leases, and as many pastoral leases in western Queensland are due for renewal in the next few years, this is an important issue for producers. This policy document proposes that the renewal of leases may require producers to demonstrate that land condition has not deteriorated as a result of their management practices. Consequently, some producers were attracted to EMS as they thought that this could help them comply with the new requirements for leasehold land renewal.

Producers also believed that EMS would help strengthen their environmental management, assist them keep up to date with legal and legislative developments about environmental management, assist them with access to the natural resources they rely on, strengthen their business management capabilities and help them improve access to current and/or potential markets. However, using EMS as a marketing tool was not a significant reason for producers becoming involved with EMS.

A few participants at the information days also believed that EMS or related programs would become mandatory in the future. They saw this pilot project as a means of shaping what may eventually become compulsory, and to tap into the free assistance provided by this pilot project. A small number of producers also thought that EMS could be used to draw together many of the things they were already doing or planned to do. They wanted to make good use of all the information and tools they possessed, and document what they were doing. Thomson (2004b) also suggested some additional reasons why producers were interested in being involved in EMS, and cited EMS as a tool to improve existing management systems and to ensure integration with quality assurance systems.

3.4.4 How producers manage their properties

Few producers in western Queensland use formal or written plans as part of their property management. This is consistent with Thomson (2004b) who reported that 69 per cent of 385 National Pilot Program producers surveyed had either no structured plan, a plan in their head or just minor documentation for their business plans. Similarly, most of these producers also relied on informal planning for their environmental management, quality assurance and occupational health and safety plans (Thomson 2004b). This lack of formal planning by pastoral producers was not surprising considering Lawrence *et al.* (1997) and Carman *et al.* (1998) both noted the preference of producers to work outdoors on their property rather than inside an office managing it.

3.5 Conclusions

This pilot project and its commercial partners found it very difficult to develop demand chains for 'environment-friendly' meat products. Limited consumer demand makes these products unviable for established mainstream companies such as large meat processors and wool brokers. It seems that supply chain activity is confined to small and specialised niche markets, such as that of Pat's Organics.

Whilst demand chains for 'environment-friendly' meat and wool could not be used as a recruiting mechanism for producers, the successful promotion and delivery of EMS information days, focusing on better business planning and recognition of good land management practices, resulted in the recruitment a relatively large number of pastoral producers.

By far the most successful mechanism for gaining pastoral producer commitment to adopting EMS were the EMS information days, combined with personal contact with producers both before and after these days.

Pastoral producers in western Queensland initially showed significant interest in EMS and related standards, believing that it could be used to communicate good environmental management practices to external stakeholders, strengthen their environmental management, assist them keep up to date with legislative developments and possibly even improve access to current and potential markets.

Information from the baseline survey combined with the findings reported in similar studies, indicate that producers in western Queensland do not regularly use formal written plans, they spend limited time in an office planning, work long hours manually outdoors, use few formal monitoring tools and keep few written records. For these reasons, a streamlined EMS focusing on actions rather than planning and documentation seems more appropriate for this target group, as is a facilitated approach to learning about EMS as they develop and implement this.

4. Pastoral EMS training

4.1 Introduction

Australian agriculture operates in a climate of change, and thus there is a role for education and training to assists farmers make changes to their farming practices (Kilpatrick 1996).

Research has found that most learning in small business is self-directed, experiential and action-oriented. Small business owners/managers prefer to use informal networks for learning. They consult business advisors, accountants, industry experts and suppliers and find an emphasis on the 'delivery' of training inappropriate (Gibb 1998, Field 1997). Producers are also small business owners/managers and may prefer to learn from these informal learning sources for the same reasons (Kilpatrick and Rosenblatt 1998).

Pastoral producers in western Queensland have had little exposure to EMS and consequently have limited understanding of its purpose and structure. For this reason the pilot project was required to provide EMS training to producers that wished to adopt EMS. This training needed to be flexible with regard to location and timing and suit both groups and individual producers. Also, given their preference for experiential learning, a facilitated approach to training was undertaken where producers could learn about the Pastoral EMS while they were developing this for their property.

The objectives of the Pastoral EMS training were to:

- give producers the skills and knowledge to develop and implement their own Pastoral EMS;
- allow producers to develop their Pastoral EMS, either within a group or individually; and
- inform producers of the benefits of the Pastoral EMS to their business.

This chapter briefly describes the materials and processes used to deliver Pastoral EMS training to groups of producers and to individuals, and it then goes onto discuss the results of this training, including its evaluation. More detailed information on the training materials and processes can be found in the *On-farm EMS and environmental labelling in the pastoral industries* mid-term report (2005).

4.2 Training methods

Training was provided to producers from a total of 40 properties (four producer groups totalling 21 properties, and 19 individual properties) and the majority of this training was conducted between June 2004 and March 2005.

Initially, the pilot project training team consisted of four staff, with three located in Charleville and one in Longreach, but this was reduced to three during the final year of the project. The role of the trainers was to deliver the Pastoral EMS training to groups and individuals and help producers develop their own Pastoral EMS.

The delivery of EMS training to the producers located in south western and central western (see Figure 4.1) Queensland involved substantial travel by the pilot project team. For example, it was not uncommon for members of the project team to travel seven or eight hours to deliver training to either a group of producers or an individual.

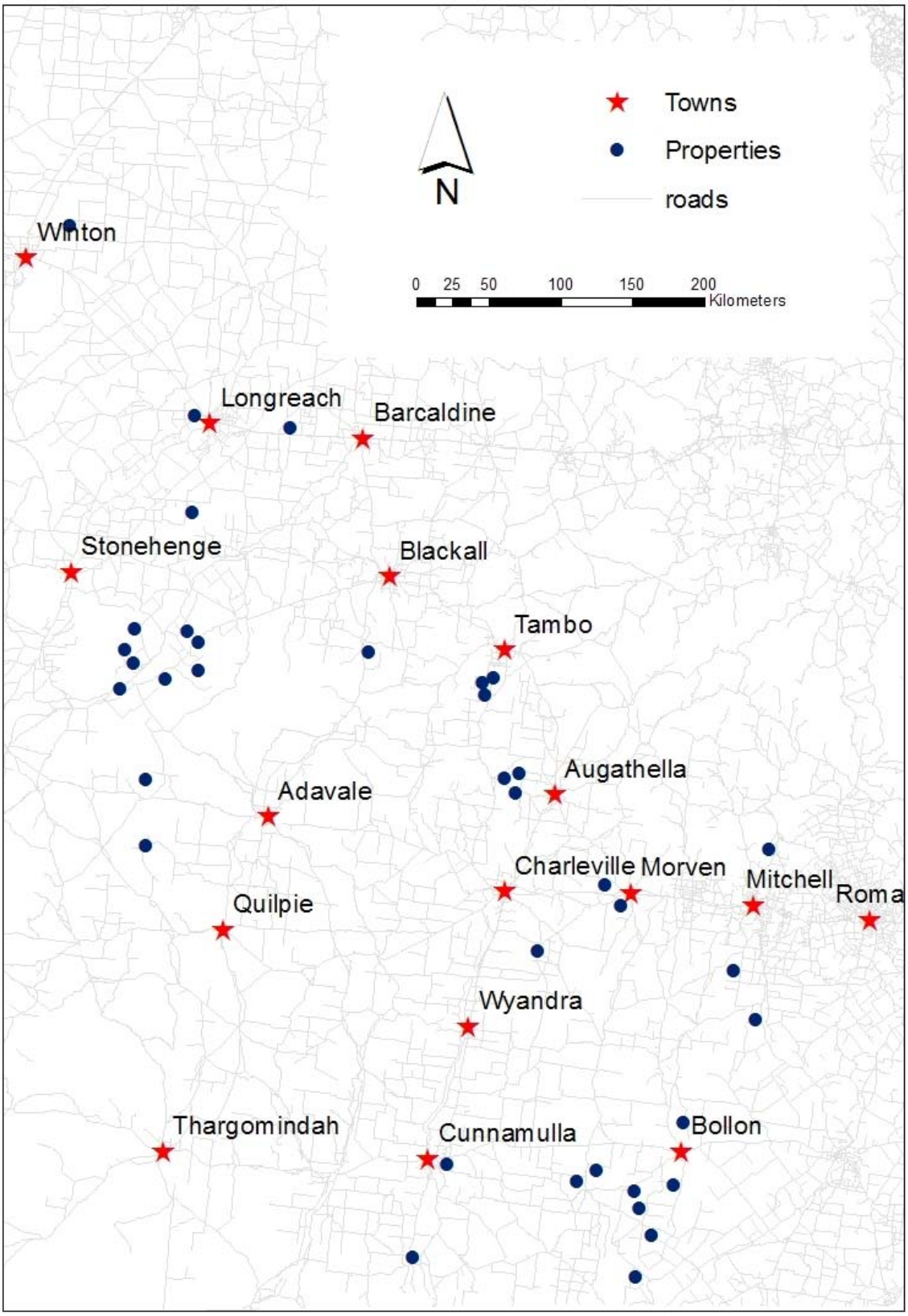


Figure 4.1. Location of properties in western Queensland implementing the Pastoral EMS.

4.2.1 Training materials

The *Pastoral EMS Guide,* along with ISO 14001 compliant examples from other properties, were the primary training materials used with both groups and individuals. Also used with groups of producers were posters of the seven elements of the Pastoral EMS presented as the continuous improvement cycle, and posters of three completed examples for each Pastoral EMS element taken from the *Pastoral EMS Guide*.

4.2.2 Training processes

Briefly described below are the training processes used for groups and individual producers, as well as the elements of the training that were conducted similarly with both sets of producers, being the management review and the end-of-project evaluation.

Training processes for groups of producers

Four groups of producers, totalling 21 properties, have been trained in the Pastoral EMS. These four groups consisted of producers from nine properties near Yaraka, six around Bollon, three near Augathella and three at Mitchell. Group training in the Pastoral EMS occurred during two group meetings, primarily conducted on-property. These meetings generally occurred one to two months apart and involved taking producers through the individual elements of the Pastoral EMS.

The two group training meetings went for a half to a full day depending on the size of the group and how long producers wanted to spend on each element. In the first meeting, producers were trained in environmental policy and risk assessment, while the second meeting covered objectives and targets, action and monitoring plans, implementation and monitoring. During these meetings producers were given an explanation of each element of the Pastoral EMS, shown some ISO 14001 compliant examples from grazing properties and were guided through some poster examples of the Pastoral EMS elements. They were then given time to develop their own Pastoral EMS element, with the option of sharing this information with the group.

Variations to this training method occurred in meeting one, with two introductory EMS activities, ‘Where am I now’ and the ‘EMS Game’, and a preliminary activity for risk assessment. A facilitated discussion was used to explain ‘Where am I now’, which was used to identify their current grazing and pasture management practices, monitoring practices and existing records. The ‘EMS game’ turned the elements of the Pastoral EMS into questions, for example, the environmental policy and risk assessment elements were transferred into ‘where do I want to be?’ and ‘what is stopping me?’, and producers were asked to place these questions in the order they thought appropriate. To introduce the risk assessment, a noisy round-robin activity (Fragenheim 2004) was conducted that allowed producers to quickly generate a large number of risks and associated causes for their properties before they started the risk assessment training.

Another variation also occurred in meeting two, with the use of an action planning activity. During this activity the group collectively completed a poster sized action plan template for a given risk. The trainer facilitated this activity by asking the group questions relating to the parts of the action plan (eg is there a legal requirement to fix this risk? what would your objective be?) and recorded the agreed group response.

Training processes for individual producers
Due to either extensive travel distances or a lack of interest in participating in a group, producers from 19 properties were trained over a period of one to six months in two ways, depending on their need for assistance. Producers either completed the majority of the Pastoral EMS on their own after an initial meeting with pilot project staff, or after an additional one to two meetings, with each meeting lasting about half a day.

During the first meeting, producers received training in EMS using the *Pastoral EMS guide*, while subsequent meetings with producers desiring further assistance provided more detail on the Pastoral EMS elements and guidance on EMS development. These meetings were relatively unstructured, with the outcomes dependent on the progress made by each producer and the time available for the meeting.

Training processes used with all producers
Both groups and individual producers received a one-on-one, face-to-face meeting for the management review, which lasted one to three hours. During this, all producers were asked a series of questions relating to the elements of the Pastoral EMS. The intention of these questions was to assess the content of the producers system in relation to the requirements of the Pastoral EMS and to assess the impacts and value of EMS implementation on property management. The management review occurred anywhere between three and twelve months after producers had completed the documentation of their Pastoral EMS, depending on their individual progress and personal circumstances.

Since the management review, meetings with both producer groups and individuals have been infrequent and primarily dependent on their need for assistance. The final meeting conducted with producers towards the end of 2005 and start of 2006 was a face-to-face and one-on-one visit to conduct the end-of-project evaluation and benefit-cost analysis.

Contact was maintained with producers in between meetings via phone, fax and email to check on progress, provide assistance and to organise the next meeting.

4.2.3 Evaluation of training
Training of producer groups and individuals was evaluated in two ways. The first form of evaluation occurred at the end of each meeting held with producers during 2004 and 2005. Secondly, the training was also evaluated during late 2005 and early 2006 during the end-of-project evaluation (see Chapter 6 of this report for more details on the end-of-project evaluation).

Evaluation conducted at each training meeting
This section briefly describes the evaluations that were conducted at the end of each training meeting with producers during 2004 and 2005. The general topics that were evaluated during the meetings were:

- helpfulness of the *Pastoral EMS Guide* in providing a clear understanding of the Pastoral EMS;
- knowledge and understanding of each of the Pastoral EMS elements;
- confidence in completing the elements of the Pastoral EMS on their own;
- usefulness of the meeting; and
- likes and dislikes about the meeting.

For individual producers, the evaluation was primarily conducted verbally and the information obtained was recorded informally during each meeting. With groups, the evaluation tended to be written feedback and this was obtained at the end of each group meeting using a number of different processes, depending on the type of meeting and the group. These included a written feedback sheet, knowledge and confidence wheels, anonymous written comments and recording likes and dislikes on butchers paper. See the *On-farm EMS and environmental labelling in the pastoral industries* mid-term report (2005) for more information on the methods used for end-of-meeting evaluation.

End-of-project training evaluation

The end-of-project evaluation was conducted during one-on-one and face-to-face meetings with producers from 31 properties during late 2005 and early 2006. It consisted of two questionnaires, one developed by the pilot project team and the other by URS.

The pilot project team's training evaluation consisted of both open-ended and rated questions on the usefulness of the training and improvements that could be made to it. Other issues covered in the end-of-project evaluation, such as reasons for uptake of EMS and producer thoughts on EMS and EMS implementation, are addressed in Chapter 6 of this report.

4.3 Results of EMS training for producers

The pilot project team visited producers from 51 properties, either in a group or individually, to conduct an introductory session on the Pastoral EMS. Of these, producers from 40 properties have been trained in the elements of the Pastoral EMS. Producers from 21 properties have been trained in a group situation and 19 have been trained individually. Table 4.1 shows the numbers of producers in groups or as individuals that received the introductory visit along with the number trained in each element of the Pastoral EMS.

Table 4.1. Number of properties trained in each element of the Pastoral EMS.

Training topics	**No. of properties trained in groups**	**No. of individual properties trained**	**Total no. of properties trained**
Introduction	21	30	51
Pastoral EMS element			
Environmental policy	21	19	40
Risk assessment	21	19	40
Objectives and targets	21	19	40
Action plans	21	19	40
Implementation	21	19	40
Monitoring	21	19	40
Management review	20	12	32

Of the 30 individual producers who received an introductory visit, 11 declined to be part of the project, despite numerous attempts at contact by the pilot project team. However, three of these are potentially still interested in developing an EMS for their property at some stage in the future.

4.3.1 Results from evaluation at each training meeting

A summary of the results of the evaluation conducted at each training meeting is given below. For more detail refer to the *On-farm EMS and environmental labelling in the pastoral industries*, mid-term report (2005).

The producer feedback gained during the training meetings highlighted the following in regards to the training materials and meetings.

Producers were asked to rank the helpfulness of the *Pastoral EMS Guide* in providing a clear understanding of the Pastoral EMS elements, and they rated this as a five (based on a scale of one to seven, with one meaning 'not at all helpful' and seven meaning 'very helpful'). Comments included, that it was well laid out and structured, clear and easy to understand and contained useful examples. This was also demonstrated by the fact that some of the members of the groups had already completed the activities and filled out the templates for each of the elements of the Pastoral EMS before attending the training meetings, as well as the number of individuals who have completed the majority of their EMS development on their own.

When producers were asked to rank the usefulness of the training meetings in providing a clear understanding of the Pastoral EMS elements, they also rated this as five (based on the same one to seven scale above). In particular, the groups of producers liked the ability to share ideas and discuss items with other group members.

The items that producers liked least in terms of the training and meetings varied considerably. A few producers in the groups were unsure of the real purpose or benefit of EMS and only implemented EMS because the rest of the group was doing this. Also, some producers only participated in EMS training to trial it and give feedback on the process, and to be able to say they have experienced EMS.

When producers were asked to rate their knowledge and understanding of the Pastoral EMS elements as well as their confidence in completing these elements on their own, they gave them both a rating of 3.5 (based on a scale of one to five, with one being a low level of knowledge and understanding or confidence and five the highest level).

The pilot project team also drew some conclusions about the outcomes of training, based on their observations during training meetings. In general, the groups of producers proved easier to train than the individual producers, and the majority of the producers in the groups planned and documented their Pastoral EMS more quickly than individuals. However, at times it was difficult to organise meeting dates that suited all producers in a group.

Other resources used during the training such as posters of completed examples of each of the Pastoral EMS elements and the ISO 14001 compliant examples proved valuable, because they provided examples that producers could use when completing their own EMS.

The introductory activities used with the groups as part of their training were also useful, such as the 'EMS game', round-robin and an action planning activity. The 'EMS game' helped to familiarise producers with the Pastoral EMS elements and the logic behind their order. The round-robin exercise used with the groups, as part of their risk assessment, encouraged producers to identify a wide variety of natural resource, production and marketing risks. The risks identified in the round-robin exercise were then reviewed, and used as a starting point for each producer to develop their own list of risks. The action planning activity, being the use

of a blank poster template filled out by the group, increased producer understanding of how to complete an action plan and encouraged discussion about the various parts of the action plan.

4.3.2 Results from end-of-project training evaluation

Discussed below are the overall results of the pilot project team's end-of-project training evaluation conducted with producers.

Producers were asked whether they found the training and assistance useful for learning about the Pastoral EMS (Pastoral EMS question 3), with the options being 'yes', 'no' and 'maybe'. Twenty-nine of the 31 producers who participated in the evaluation selected 'yes'.

When asked why they found it useful (also Pastoral EMS question 3), a wide variety of responses were received with some producers providing more than one reason (Figure 4.2). The main reason (17/31), was that it helped to improve their understanding of EMS by providing them with information and guidance. The next most common reason (7/31), was that the training was useful because it made producers look at what they were doing objectively and provided some structure for this. Less common responses, mentioned by four or fewer producers, were also recorded (see Figure 4.2).

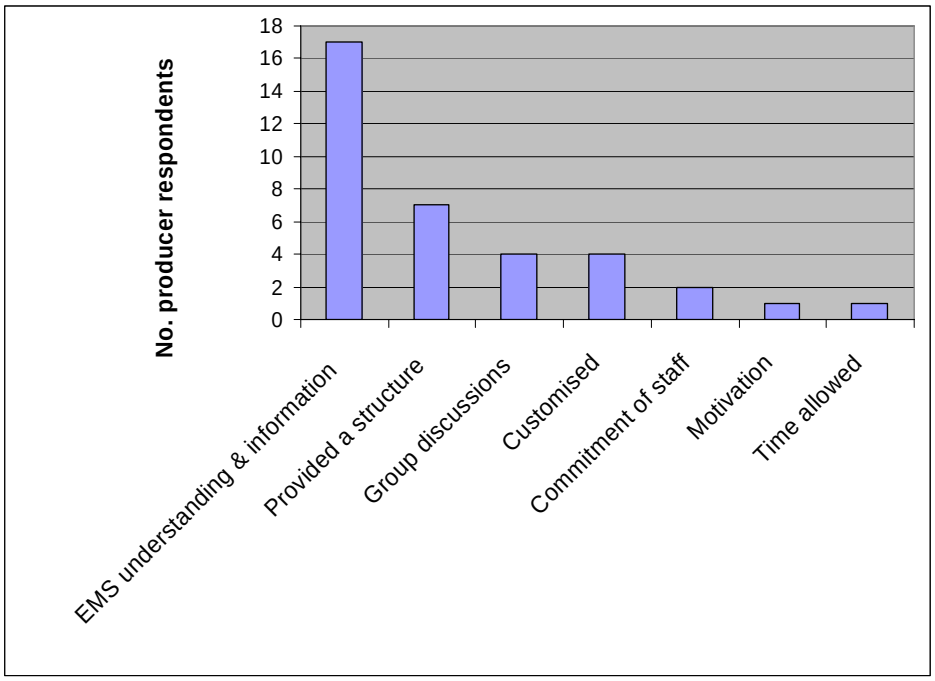


Figure 4.2. Reasons identified by producers as to why they found the training useful.

The one producer who said the training was not useful felt that he was already doing what was necessary to complete an EMS, and hence the training was not helpful. The single person who responded with 'maybe' felt that the training was useful as it was in a logical sequence, but they believed that the project staff and the Pastoral EMS training materials were lacking in practical information and local knowledge about the pastoral industry.

Producers were then asked to rate on a scale of 1 to 5, with 1 being 'not at all useful' and 5 being 'very useful', specific elements of the Pastoral EMS training (Pastoral EMS question 3.1). At least 27 of the 31 producers found all but one of the training elements either 'useful' or 'very useful' (see Table 4.2). The one exception to this was the element on activities (eg activities for each of the elements, round-robin and EMS game), where only 18 producers found these 'useful' or 'very useful'. The main reason for this was that the individual producers who did the majority of their EMS development by themselves were not exposed to these activities, and hence could not rate their usefulness.

Table 4.2. How useful producers found particular elements of the Pastoral EMS training.

Training elements	**Ratings**				
	Not at all useful	**Slightly useful**	**Unsure**	**Useful**	**Very useful**
The Pastoral EMS Guide	0	1	3	18	9
Activities (eg for each of the elements, round-robin and EMS game)	0	3	1	12	6
Learning about EMS while developing your own	0	0	1	22	8
Meetings with staff	0	0	0	11	20
Contact between meetings (phone, fax and email)	0	0	0	13	17
Skill and knowledge of the project staff	0	0	2	14	15

When producers were asked to choose the single most useful element of the Pastoral EMS training from the list in Table 4.2, a wide variety of responses were received (see Figure 4.3). However, the three items that producers found most useful were the meetings with project staff (12/31), learning about EMS while developing this for their property (7/31) and the *Pastoral EMS Guide* (5/31).

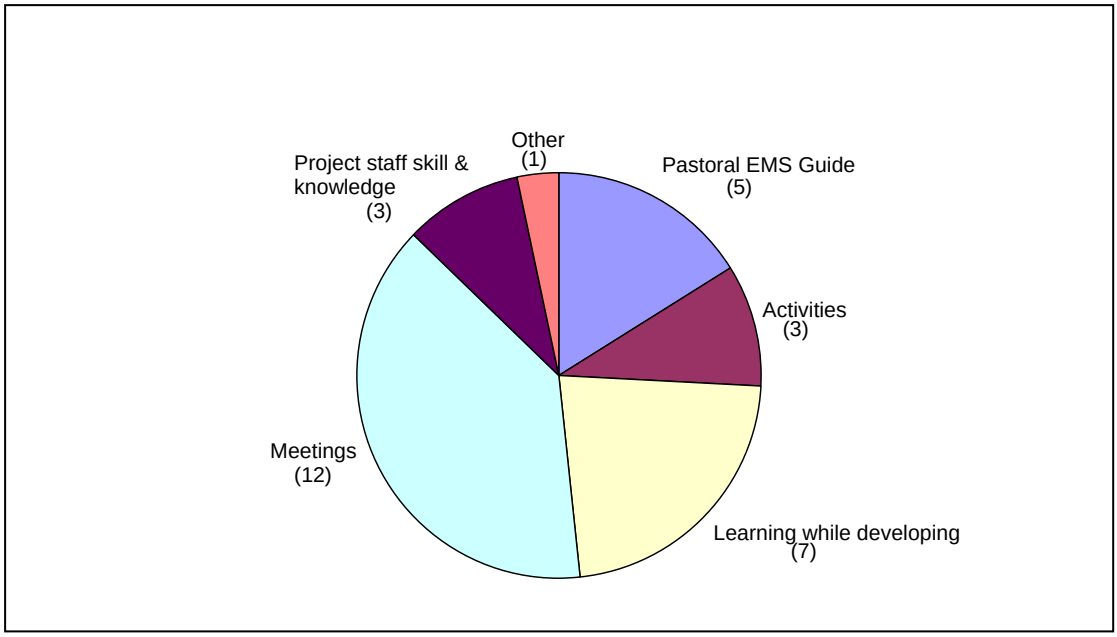


Figure 4.3. The one most useful element of the Pastoral EMS training.

Producers were also asked what could have been done to improve the Pastoral EMS training (Pastoral EMS question 4). While a variety of suggestions were identified, with some producers providing more than one response, 12 producers could not identify any improvements to the training and two were unsure (Figure 4.4). Six producers suggested that to improve the training more information was required and five of these thought that mapping should have been included. Also, five producers said that if it had rained and they had more time, then this would have motivated them to make more use of the training information, and more quickly develop and implement their EMS. Four producers said that working within a group would have been of benefit and a number of single responses were also received (see Figure 4.4).

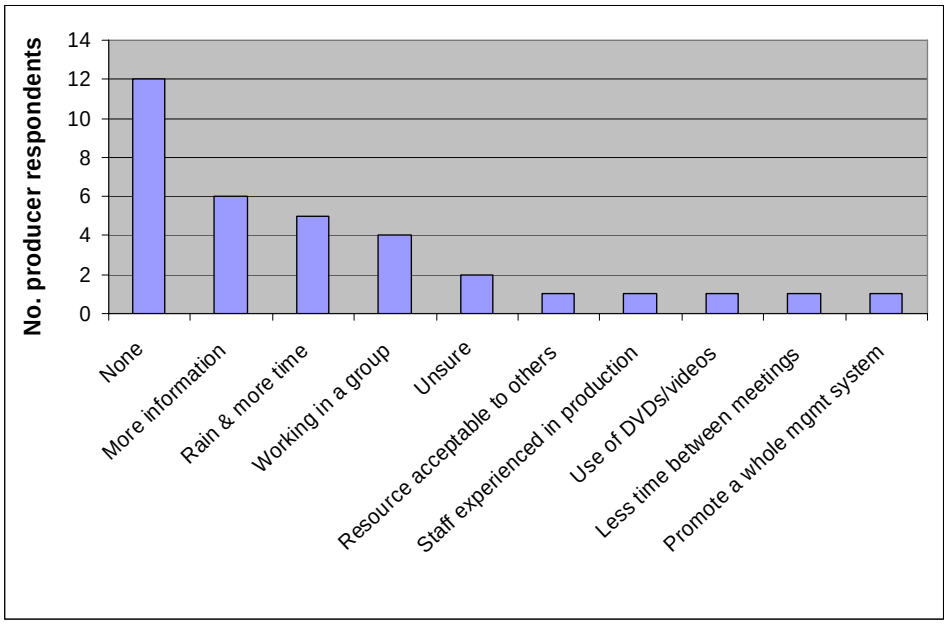


Figure 4.4. Improvements to the Pastoral EMS training, as identified by producers.

Producers were then given a number of future options for improving the Pastoral EMS training (Pastoral EMS question 4.1), and asked to rate these on a scale of 1 to 5, with 1 being 'not at all useful' and 5 being 'very useful' (see Table 4.3). While the responses of producers varied to some extent, there was a tendency for them to rate most of the proposed options as only 'slightly useful' to 'not at all useful'. Only a 'more structured training manual with guidelines for environmental management', 'staff more experienced in EMS/livestock production' and 'more meetings and assistance', were rated by around one-third of the producers as 'useful' or 'very useful'.

Table 4.3. The level of usefulness of potential elements of Pastoral EMS training, as rated by producers.

Potential training elements	**Ratings**					
	Not at all useful	**Slightly useful**	**Unsure**	**Useful**	**Very useful**	**Not applicable**
Prior training in ISO 14001	13	10	3	4	1	0
A more structured manual with guidelines for environmental management	5	14	3	7	2	0
Staff more experienced in EMS/production	10	7	4	8	2	0
Staff you were more familiar with	23	3	2	2	1	0
Working in a group	1	6	0	3	1	20
Training by a non-government organisation	21	5	3	1	1	0
Training in other ISO 14001 elements	15	3	7	3	3	0
Faster delivery	21	5	1	1	2	1
Slower delivery	24	4	1	1	0	1
More meetings and assistance	13	6	3	9	0	0
Other	0	0	0	2	4	0

When producers were then asked to choose the one element which would have been most useful for improving the Pastoral EMS training from the list in Table 4.3, again a wide variety of responses were received (see Figure 4.5). The most popular, chosen by 12 of 31 producers, was a more structured training manual which provides more guidance on environmental management.

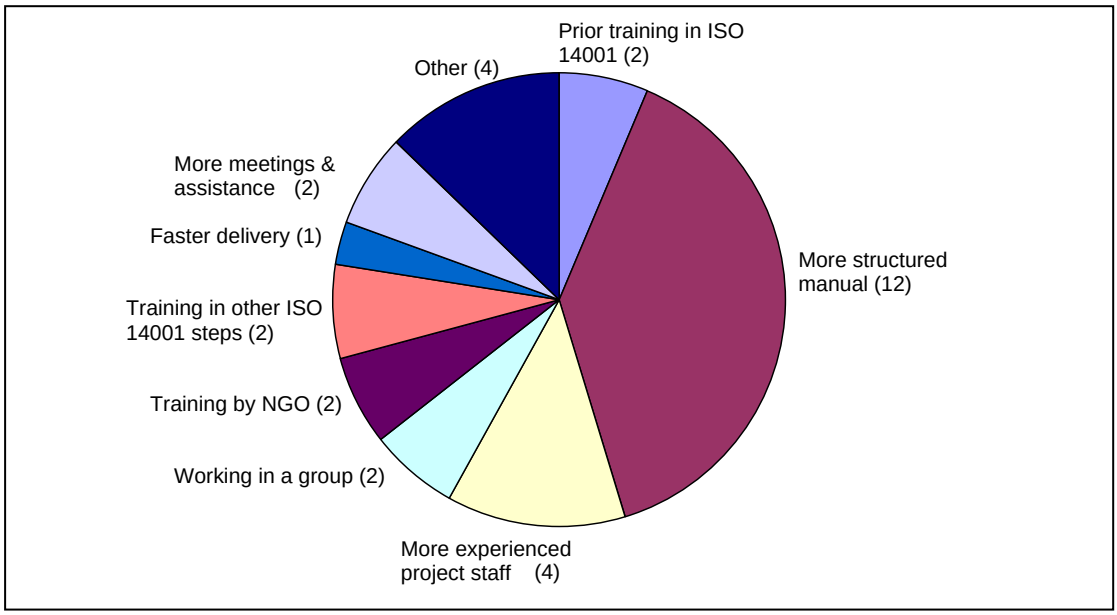


Figure 4.5. The one element which would have been most useful for improving the Pastoral EMS training.

4.4 Discussion

Discussed below are the facilitated EMS training approach taken by this pilot project, the benefits of using a simplified Pastoral EMS for training, the advantages of training groups of producers compared with individuals, and an evaluation of training materials and processes.

4.4.1 A facilitated and flexible approach to training

Given that the producers trained by this pilot project liked the training meetings and learning about EMS while developing it for themselves, and that nearly half of them had no suggestions for how training could be improved, it appears that the facilitated approach to training worked well and was suited to western Queensland producers. Interestingly, Banney (2002) reported that producers participating in an MLA EMS project were not provided with any EMS training, but in the end-of-project report, recommended that producers receive training before they attempt EMS.

The majority of producers found the training useful because it helped improve their understanding of EMS and provided them with the necessary guidance and assistance. This indicated that the first objective of the training, being to give producers the knowledge and skills to be able to develop and implement the Pastoral EMS, was achieved. Also, producers learnt about and developed their EMS in groups or individually, which satisfied the second objective of the Pastoral EMS training. In contrast, the extent to which the third objective was achieved, which was to instil in producers the benefits of the Pastoral EMS to their business, is not known, as this was not evaluated. However, the overall lack of benefits that producers gained from EMS, as reported in Chapters 5 and 6, suggests that the third objective was not met.

The training provided by the pilot project was highly flexible in the number and frequency of meetings depending on producers' requirements, and it was found that one process and level of detail did not suit all producers. The importance of flexibility in training has also been mentioned by Cannon (2005) and Roberts *et al.* (2005), and the fact that no one process or method is best is also reported in Black (2000), Heisswolf *et al.* (2003), Vanclay (2004) and Thomson (2005). This leads to the conclusion that to better facilitate EMS training it is necessary to be highly flexible in the amount of information given to producers. Training should begin with the basic information to allow producers to develop an EMS on their own, with more detail provided if and when this is required by them.

The simplified structure of the Pastoral EMS also offered advantages for this facilitated approach to training, as it enabled participating producers to quickly achieve results that were directly relevant to their properties. For example, after just one meeting some producers completed all of their planning requirements and moved straight onto implementation and monitoring. The benefit of using a simple approach that encourages producers to become involved in a process and quickly move onto actions is also reported in Anon (2005a) and Thomson (2005).

4.4.2 The effectiveness of group training

Overall, groups of producers have been easier to train than individuals. Working with groups is more efficient, as one meeting can be spent with many producers enabling the pilot project to work with larger numbers of producers. Because groups are led by a small number of people, their decision to adopt EMS can persuade others in the group to try it as well. This may also contribute to the greater number of producers that can be recruited through groups.

The fact that groups were easier to train than individual producers is primarily due to the structured nature of the group meetings, with pre-determined meeting dates and agendas. Graham *et al.* (2003) reported that producers attributed high value to group training and support activities that helped them through some of the difficulties in starting to develop an EMS. In comparison, individual producers were not provided with a set training program with specific meeting dates for them to follow. As a consequence, it was easier for them to postpone or cancel meetings because this only affected one other person, a member of the pilot project team, rather than a group of their peers.

Furthermore, the groups received training that tended to cover explanations of the Pastoral EMS in more depth, and contained more activity-focused training and discussion. In general, individuals did not write up much of their EMS during the meetings, whereas time was provided during group meetings for people to write sections of their EMS. Other pilot projects have also faced difficulties in getting producers to complete activities outside of meeting times (Thomson 2004b, Roberts 2004, Anon 2005a).

The benefits of working in groups have been reported by a number of other authors. Banney (2002), Thomson (2004b), Roberts (2004), Cannon (2005), and Seymour and Ridley (2005) found that producers often obtain a lot of social benefits from being part of a group. Similarly, Ridley *et al*. (2003) wrote that groups can engender a sense of belonging and reduce the isolation common on family farms. The Pastoral EMS producers working in groups also benefited from the ideas and discussions of the group. Groups collectively contain a lot of experience and a diversity of views and knowledge, and the discussion that occurs can result in more informed and better decisions (Banney 2002, Ridley *et al.* 2003, Ridley 2004).

However, there were also some disadvantages in working with groups. At times it was difficult to organise a meeting date that suited all producers in a group, due to other commitments related to their business, and this difficulty has also been reported by other pilot projects (Thomson 2004b, Anon 2005a). To overcome the difficulty of getting everyone together at the same place and time, Donovan *et al.* (2004) suggested an e-learning approach, where training is undertaken via the internet, computer network or a stand-alone computer application.

4.4.3 Use of training materials – what is best?

The *Pastoral EMS Guide* was effective in providing producers with a good knowledge and understanding of the Pastoral EMS elements. Standen and Wilson (2005) also found that simple documentation coupled with practical explanations were useful for outlining to producers what was expected. However, the ALMS pilot project has reported difficulties in using paper-based manuals and worksheets (Anon 2005a), although this was probably heightened by the need to document all 17 elements of ISO 14001. The *Pastoral EMS Guide* also included relevant examples of each EMS element that producers could use as a guide for developing their own EMS. The usefulness of relevant examples in also noted by Banney (2002).

While producers generally found the *Pastoral EMS Guide* useful, 12 of the 31 producers that completed the end of project evaluation thought a more structured training manual which included guidance on what they should do in terms of environmental management would have improved the training. Consideration should be given to either incorporating this material into the *Pastoral EMS Guide* or linking it with this for future EMS training, as Ridley (2004) has reported that the potential for EMS is great if underpinned with good science and multiple knowledge sources.

Likewise, other training materials, such as the posters and the ISO 14001 compliant examples, should also be used with future training, as they can be used with groups or individuals, encourage interaction and cater for different learning styles.

4.5 Conclusions

The facilitated approach to training, where producers learnt about the Pastoral EMS while developing it for their property, appeared to have been appropriate for producers in western Queensland. Training ran smoothly, most producers found the training useful, they developed a good understanding of the Pastoral EMS and the confidence to apply this to their own property. However, while most producers completed an entire cycle of the Pastoral EMS, they still do not understand the continuous improvement cycle. Greater emphasis on this and a longer period of use will be required before producers can be expected to understand and appreciate continuous improvement management systems such as EMS.

The flexibility of training, particularly with regard to the number and frequency of meetings, the processes used, and level of detail provided, catered for the many different circumstances and learning styles of individuals, meant that more producers decided to take part in and continue with EMS training.

In general, the groups of producers have been easier to train, even though they involved more preparation before the meeting compared with individuals, and it was sometimes harder to organise one date that suited all participants. This was primarily due to groups following a set training schedule of meeting dates and agendas, peer pressure to keep to this schedule,

covering topics in more detail, and time provided to develop their EMS during these meetings. These producers working in groups also benefited from the ideas and discussion generated by the group. However, there is still a need to train individuals, due to this being the preferred learning style for some people, and because of their isolation from other producers.

The *Pastoral EMS Guide* (in particular the simple explanations and relevant examples) was an effective training tool for improving producers' knowledge and understanding of EMS. This is evident by the number of producers who quite quickly and easily developed their own EMS, particularly those who completed the majority of this in their own. While producers were satisfied with the information provided on the EMS processes, they required more guidance on the significant environmental issues in their region and the industry BMP used to address these.

Finally, it is desirable to use a range of other training materials and processes, as this caters for the different learning styles of producers.

5. Pastoral EMS development and implementation

5.1 Introduction

On receiving training in EMS, the system provides producers with a certain amount of freedom to address the issues they find most relevant. Developing an EMS is regarded as the planning and documentation of each element, whilst implementation is about on-ground actions and updating and maintaining the EMS. EMS documentation on its own is not evidence of implementation (Banney 2002).

Van de Wouw (2005) reported that understanding the EMS process as well as preparing and implementing it can be a very exacting experience for producers. If they become frustrated in the early stages of development and implementation producers may become disillusioned. Ridley (2001) also reported that although many industries successfully use EMS, it has not been widely adopted in agriculture because of the lack of necessity, perceived complexity, cost and time associated with meeting its requirements, and the fact that the drivers for adoption are not yet strong. However, Ridley (2001) further reported that development of EMS is both environmentally responsible and politically wise as it can potentially help to re-build the confidence of consumers about the land management skills of farmers.

Development of the Pastoral EMS by producers in this pilot project occurred in conjunction with the facilitated approach to training described in Chapter 4. In this respect, producers were given various levels of support with the development of their EMS, and then it was up to them to implement the plans they had developed.

This chapter describes the development and implementation of the Pastoral EMS by producers from 37 properties in western Queensland, including the methods and results of EMS development and producer progress with and commitment to EMS implementation.

More detailed information on development and implementation of EMS by pastoral producers can be found in the *On-farm EMS and environmental labelling in the pastoral industries* mid-term report (2005).

5.2 Methods

The majority of producers participating in this pilot project have developed and implemented a Pastoral EMS for their property as they have learnt about EMS through the facilitated training approach described in Chapter 4. As such, all three elements, training, development, and implementation, are interlinked. Consequently, the methods described under training in Chapter 4, Section 4.2, are essentially the methods used for the development of each producer’s EMS.

The initial development phase for EMS, covering the first six elements of the Pastoral EMS, occurred between June 2004 and March 2005, although a few producers continued with this until November 2005. Producers' progress with developing EMS during this period varied depending on when they made their initial commitment and whether they were in a group or working individually.

Four groups of producers, totalling 21 properties, completed much of the development of their Pastoral EMS during the training meetings. The majority of these producers developed the first six elements of their EMS during two group meetings, with the exception of a few who

wrote drafts before the meetings and continued working on their EMS in their own time after the meetings. During the first meeting, producer groups focused on the environmental policy and the risk assessment. At second meeting, they identified their priority risks which they turned into action plans. All of the producers working in groups have developed the first six elements of the Pastoral EMS, and only one has not completed all seven elements.

Of the 16 individual producers, eight worked independently and developed their Pastoral EMS on their own after an introductory visit from pilot project staff. Following this visit, six producers developed their Pastoral EMS before, during or after one to two additional visits from the pilot project staff. One producer developed most of their EMS during the first introductory visit and one producer developed their EMS mostly on their own, via a web based National EMS course. One individual documented only two elements of the Pastoral EMS, producers from 15 properties documented the first six elements, and 12 completed all seven elements.

The commencement of a facilitated one-on-one Pastoral EMS management review began in late 2004 and carried through until early 2006 (see Chapter 4, Section 4.2.1). This generally involved pilot project staff conducting on-property visits to assist producers through the management review. Thirty-two of the 37 participating producers completed the management review.

As well as the initial training and/or development meetings, assistance from pilot project staff was available to producers throughout the development and implementation process via personal visits, phone, email and fax.

A more thorough description of methods can be found in the *On-farm and environmental labelling in the pastoral industries* mid term report (2005).

5.3 Results

Producers from 37 properties who have developed the Pastoral EMS are at varying levels of implementation. Producers from 37 properties have developed an environmental policy and risk assessment, 36 have established objectives and targets and action plans, and 32 have completed a facilitated management review (Table 5.1).

Table 5.1. Number of properties that have developed and implemented the elements of the Pastoral EMS.

Pastoral EMS element	No. of properties in groups	No. of individual properties	Total no. of properties
Environmental policy	21	16	37
Risk assessment	21	16	37
Objectives and targets	21	15	36
Action plans	21	15	36
Implementation	21	15	36
Monitoring	21	15	36
Management review	20	12	32

The results of EMS development and implementation by producers collected during the management reviews are presented below.

5.3.1 Management review results

The results outlined below were obtained from the 32 collated producer Pastoral EMS management reviews and the observations of the pilot project team.

Environmental policy

The environmental policies developed by producers from 37 properties were generally hand written, half a page in length and just over half were signed and dated. However, the policies of the individual producers were often a little longer, more comprehensive and more personalised than those of producers from groups.

The majority of producers, 29 out of 32 that completed the management review, had policies that contained a commitment to continuous improvement of production and natural resource management, while only 15 contained a commitment to improved marketing. Policy statements varied widely between producers, with a representative example provided in Table 5.2. Again, the majority of producers (30/32) said their environmental policy had an influence on the management planning of their business, and they considered it during the day-to-day operations of their property, as it was always present in the 'back of their mind'. Only five producers had chosen to make their environmental policy available to external parties.

Table 5.2. An environmental policy of one of the pastoral producer participants.

'XXXX' is a property best suited to extensive grazing. Production, financial and life style outcomes are closely aligned with responsible and caring management of the environment.

This policy is a living document that sets out a commitment to a process of continual improvement to ensure environmental sustainability and improvement.

Management principles underpinning this policy are:

- Practices relating to enterprise mix and stocking strategies are developed using principals that maintain and/or improve the health of the environment. Issues of soil type, woody vegetation type/density, pasture mix, ground cover and climate variation are paramount.
- Use of appropriate best practice management and marketing strategies to produce and turn-off high quality meat and fibre.
- Responsible and conservative use of natural water resources.
- Commitment to both human and animal health and safety through responsible use of chemicals and safe work practices.

Proactive participation in opportunities to keep abreast of advancements in technology, business management and personal development.

Risk assessment

Thirty-seven producers completed a risk assessment where the average number of risks identified was 10, with most risks having two or more causes. Of the 32 producers that completed the management review, all had risks relating to livestock and pasture management, 30 had risks on pests such as weeds and feral animals, and 20 had risks relating to water and soil management. Biodiversity was only mentioned in eight of the risk assessments. Irrespective of whether producers worked in groups or individually they generally identified similar issues. Table 5.3 contains an example of a risk assessment, documented by one of the producers participating in this pilot project.

Even though a decision-tree was provided to assist producers to prioritise their risks, 11 of the 32 producers that completed the management review did not use it, and instead ranked their risks based on their own experiences and priorities.

A benefit of the risk assessment process identified by producers was that it encouraged them to think and plan more about risks, and break the big problems up into more manageable pieces. Thirty of the 32 producers thought that the risk assessment was effective at identifying and prioritising risks, and 23 thought that this process had improved their knowledge of risks. They especially liked the risk assessment noisy round robin activity (see Chapter 4, Section 4.2.2) as it provided a chance to think about all the issues they faced, and discuss how other members of the group addressed these issues. They didn't like the term 'risk' as it implied negativity and would have preferred 'issues' or 'aspects'.

However, even though producers saw some benefit in risk assessment, the majority claimed they already knew most of the risks and their causes, and those ranked as high priority were usually the ones they were going to address anyway. Some producers felt that the risk assessment was unnecessary, and expressed their frustration with sitting in a room writing these risks down instead of being outside fixing them.

Table 5.3. A risk assessment of one of the pastoral producer participants.

Risk (environmental, production and marketing)	**Cause**	**Ranking (low, medium or high)**
Tree thickening	Drought	H
	Lack of clearing	H
	Lack of fire	H – need rain
Time consuming to muster	No driving lanes	H
	Unfenced waters	M
	Poor set up cattle yards	M
Poor condition of land along creek	Concentration of cattle & feral animals	M-check funding
Stock have access to dump	Unfenced	H
Insufficient waters	Too large paddocks	M-check funding
Cattle bog in dams	Silt in dams	M
	Unfenced	M
Fences in poor condition	Trees on fence line	L
	Old wooden stays	L
	Native animal damage	L
	Fires in Spinifex	L
Lack of fire	Insufficient fuel	H-need rain
	No grass or paddocks in reserve	H-need rain
Infrastructure in poor condition	Lack of maintenance	L
	Lack of time & money	L
Stock killed on roads	Unfenced	M
Lack of house water recycling	Never designed	L
Reduced pasture productivity	Drought	H
	Set stocking rate	M
	Native and feral animals	L
	Insufficient watering points	M
	Tree thickening (lack of clearing)	H
	Weeds	L
Decline in stock productivity	Set stocking rate/ paddock	M
	Low calving %	H
	Lack of protein	H
	Buffalo fly	H
	Botulism	H
Increasing numbers of native and feral animals	Lack of coordinated control	L
	Man made waters	L
Low profits for cattle	Cost of supplements	M
	Cost of meeting legislative requirements	L
	Cost of vaccines	L
	Cost of meeting NLIS	L
	Market price	L

Objective, targets, action and monitoring plans

Objectives, targets, action and monitoring plans were developed within the one template by 36 producers (see Table 5.4 for an example of an objective, targets, and action and monitoring plans developed by a participating producer). While the number of risks addressed by producers varied from one to 13, on average, they initially focused on three of their high priority risks, and then developed objectives, targets, action and monitoring plans for these.

Common issues addressed in these plans were herd and flock improvement strategies, weed infestation, pasture improvement through fencing and redistribution of watering points, feral animal control, and management of tree regrowth and encroachment. Monitoring activities included photo-sites and pasture assessments which have ranged from limited visual observations to formal GRASS Check (Forge 1994) sites. Other monitoring activities included regular visual observations of weed infestations, shrub and tree regrowth, watering points, stock condition, records of livestock numbers and movements, pasture feed budgeting and grazing charts, and price ($/kg) for cattle at the sale yards (see Chapter 6, Sections 6.3.6 and 6.4.6 for additional information on what producers monitored).

Thirty-one of the 32 producers that completed a management review thought that their objectives and targets were aimed at achieving the intention of their environmental policy, and 28 producers thought that their objectives and targets related to high ranked risks in their risk assessment. Twenty-six producers thought their targets were specific, measurable and achievable.

Twenty-nine of the 32 producers thought that the development of objectives and targets were beneficial to property management, but only 22 felt the same about action plans. These producers thought that action plans were beneficial because they helped improve their focus and encouraged them to take action now. Even so, a number of producers found documentation of these plans painstaking, not particularly useful and frustrating. Even so, 23 of the 32 producers noted that they had accessed new information, tools and training to help inform their actions, whether it was prior to or during their involvement in this pilot project.

Seventeen of the 32 producers have recorded the results from monitoring activities that were stated in their action plans. Significantly, 15 producers thought that their monitoring had increased as a result of their EMS, although 22 said that documenting monitoring actions provided them with very little benefit, although this is primarily because little monitoring had been carried out at that time.

The progress of these action and monitoring plans has varied, with most producers implementing at least the first few actions within their plans, although the majority have found or made little time for this. Producers from 36 properties have started to implement their action and monitoring plans, but only 14 of the 32 producers that completed the management review have seen some on-ground improvements.

Table 5.4. An action plan of one of the pastoral producer participants.

Risk	Tree thickening	
Is there a legal requirement?	Yes - Vegetation Management Act 1999	
Objective (What I aim to do to alleviate the risk)	To reduce tree cover & improve pasture growth	
Targets (What I aim to achieve, by how much and when)	Reduce tree cover in paddock one by 45% by December 2006. Reduce tree cover in paddock two by 30% December 2006.	
Actions (How am I going to do it)	**When**	**Done (✓)**
Ballot approved	Depends on NRM	✓
Contractor	After approval	✓
Aerial seed	After clearing	
Destock	After good rain	
Burn regrowth	After buffel seeds	
Aerial seed if needed	After burning	
Restock	After rain	
Monitoring (How will I know if I have met my targets?)	**When**	**Done (✓)**
Photo's before and after clearing		
Photo's before and after burning		
Comments (complete if delays/problems arise)		
Signature:	**Date:**	

Management review

As mentioned earlier, producers from 32 properties have participated in a management review, some answered the questions briefly while others, especially couples, had productive discussions on particular aspects of their Pastoral EMS.

5.3.2 Pastoral EMS options and further EMS development

The pilot project recommended to producers that they use their Pastoral EMS as a general land and livestock management system that can be built on to meet various mandatory and voluntary requirements associated with their industry, and to realise business opportunities. The Pastoral EMS options that were offered in mid-2005 were:

- Sustainable grazing systems, through workshops such as Edge Network Grazing Land Management, Nutrition Edge and Stocktake;
- Additional ISO 14001 elements;
- Full ISO 14001 EMS;
- National Livestock Identification System (NLIS);
- Livestock Production Assurance (LPA) level 1;
- LPA level 2 – Food safety, quality assurance and environmental management;
- Quality Assurance (SQF 1000);
- Business planning; and
- NRM funding programs.

See the *On-farm EMS and environmental labelling in the pastoral industries* mid-term report 2005 for a more thorough description of these options and their use.

While these options were offered on several occasions, only a small number of producers expressed interest, being for additional ISO 14001 elements (primarily operational procedures), and the sustainable grazing systems training workshops. Only one of the three producers interested in operational procedures decided to include these in their EMS. Also, the number of producers interested in the sustainable grazing systems training was less than the minimum number of eight needed to run these workshops, and consequently this training could not be accessed.

Five EMS producers recently applied for and received Natural Heritage Trust Envirofund grants. To support their applications, they either submitted their environmental policy or included a statement detailing that they had developed an EMS for their property. Also, members of the pilot project team assisted these producers to develop their applications.

Overall, after EMS training was completed there was little demand from producers to meet with pilot project staff, and generally it was the pilot project staff that maintained contact with them. In particular, three of the four groups of producers implementing EMS have met during the final year of the project. One group of producers met twice, once for an information session on MyEMS software (http://www.myems.com.au/) and secondly for an update on their EMS progress. The second group also met to discuss their progress with EMS implementation, and the third group came together for an information session on vegetation management and an update on the marketing components of this pilot project.

The pilot project team have also met one-on-one with producers during late 2005 and early 2006 to conduct the benefit-cost analysis and end of project survey (see Chapter 6 for more details on this), which provided producers with an opportunity to give feedback on EMS and the pilot project. Since this meeting, the majority of producers have not felt the need to meet with pilot project team members, despite offers from the latter to do so.

The final meeting for producers involved in this pilot project occurred in July 2006, where the key findings from the benefit-cost analysis was presented as well as the results from the meat and wool market research (see Chapters 7 and 8). This meeting also gave producers options and referrals to other organisations that can support them with EMS implementation if they wished to continue with this.

5.4 Discussion

Over a period of almost two years, this pilot project assisted 37 pastoral producers in western Queensland to develop and implement the Pastoral EMS for their properties. The discussion below highlights the major issues that played a role in producer development and implementation of EMS. Some of the issues covered were derived from conversations that the pilot project team had with producers, rather than any formal recorded feedback. Chapter 6 presents the results of the formal benefit-cost analysis of EMS implementation by producers that was completed towards the end of this pilot project.

5.4.1 EMS development more successful with groups

In a number of respects, this pilot project had more success working with groups of producers than with individuals. Twenty-one producers in groups who were trained in the Pastoral EMS have all developed an EMS and commenced implementation, except one producer who did

not complete the management review due to health reasons. In comparison, only 12 of the 19 individual producers who were trained commenced EMS development and implementation.

Producers working in groups generally made faster progress with the development of their EMS than individuals. This was primarily due to the benefits associated with group work such as it provided motivation, encouraged development, and generated more discussion. These benefits were reported in a number of studies (Banney 2002, Ridley *et al.* 2003, Thomson 2004b, Ridley 2004, Roberts 2004, Cannon 2005, Seymour and Ridley 2005) and for more details on these see Chapter 4, Section 4.4.3.

The extent to which individual producers developed their EMS varied extensively. Some made little or no progress on their EMS since the initial introductory and training visit, others only progressed their EMS when an EMS pilot project staff member was present, and a few made significant progress in their own time. Those individuals who made significant progress with EMS tended to be the people who were more highly interested in EMS and/or those who were looking out for and regularly adopting new practices and programs, with the aim of improving their businesses.

For individual producers, EMS development primarily relied on their own motivation due to the lack of interaction with other producers and the absence of a strict training schedule. For more information about this see Chapter 4, Section 4.4.3. In many cases it was the isolation and long distances to the closest producer implementing EMS that was the reason for individual producers working alone. However, some producers preferred not to work in a group and chose to develop EMS on their own.

5.4.2 The Pastoral EMS elements

Producers had varying opinions on the elements of the Pastoral EMS, believing some elements to be more beneficial than others. Many producers found it difficult to get started on writing their policies and concern was expressed as to why they were writing an environmental policy and not a business policy. Generally, producers found little benefit in documenting an environmental policy and thought there was even less benefit in putting it up on their office wall or making it available to external parties. This is because most producers never have anyone else but themselves in their office and none of the buyers or agents they deal with wished to see such a document.

The risk assessment element of EMS encouraged producers to look more closely at the risks on their property, and improved their awareness of these. For producers working in groups, the greatest benefit in doing a risk assessment was that it was a chance to discuss with their neighbours how they were managing particular risks. Many producers commented that by doing a risk assessment it had pushed some of the issues they knew were there to the forefront of their minds.

For the majority of producers, benefit was seen in writing objectives and targets, because these provided them with a clear focus and a timeframe to work to. In contrast to this, the writing of the action plans was regarded as less beneficial by many producers. Many producers felt that their plans would become redundant due to constantly changing climatic and other conditions, and they weren't comfortable being 'locked into a structured plan' and having to alter this as their circumstances changed.

In relation to monitoring, this was mostly confined to the recording of visual observations in their pocket diaries. There was some new monitoring implemented by producers but this was mostly informal, as setting up formal monitoring sites wasn't a priority, as they felt they were driving around their paddocks regularly enough to notice changes in conditions. However, the Pastoral EMS does appear to have increased producer awareness of monitoring activities.

Of the producers from 40 properties that received EMS training (see Chapter 4, Section 4.3), only those from 32 properties have implemented all seven elements of the Pastoral EMS. This decline in the numbers completing EMS is not surprising. Ridley *et al.* (2003) observed that producers can be turned off EMS if their first experiences are with the more 'bureaucratic' elements such as policy, objectives and targets, and recommended that an environmental self assessment activity is an effective way to introduce EMS. This initial self-assessment stage was also recommended by Banney (2002), Van de Wouw (2005) and Williams *et. al.* (2006) and has similarities with the strategic business planning process recommended in Pahl and Yeoman (2005).

5.4.3 The Pastoral EMS and NRM

At the time the management reviews were conducted, most producers had not implemented the actions listed in the action plans and of those that had, only half had seen any on-ground improvements. Natural resource management did not feature highly in producers EMSs when compared with production management, as they are generally more focussed on their stock, their main income, and are more likely to concentrate on issues relating to this such as calving and lambing rates. However, some of these production issues, particularly native pasture management, have flow on effects for natural resource management. Ross *et al.* (1999) also reported that pastoral producers were generally more likely to focus on overall production management issues and the weather.

For those EMS producers that applied for and received Natural Heritage Trust Envirofund grants, the extent to which their EMS helped them access this funding is not known. However it is clear that EMS provides a good framework for integrating the Envirofund projects into the overall business, and for monitoring and reporting on-ground results. Additionally, the producers that were successful believed that their Pastoral EMS assisted them with their applications.

5.4.4 Understanding and appreciation of management systems

The purpose and benefits of continuous improvement management systems are still unclear to a large number of the producers involved in this pilot project. Only a few producers have noted that the continuous improvement cycle provided a very good platform to work from, one that could lead to improvements in particular facets of their business.

Most producers regarded the Pastoral EMS as a static program, perceiving that they had completed this when they had developed and documented each of the elements. Producers had little to no awareness or interest in making changes to elements of their EMS, and it is unlikely that they will review and revise these in the future. There was a general lack of understanding and enthusiasm for the continuous improvement cycle and the benefits that may arise from this. For example, there was very little interest in the offers from the pilot project to help producers expand their EMS by building on it with the requirements of a range of property programs such as QA, food safety and OH&S. Generally, pastoral producers do not plan strategically, and do not use systematic or formal processes to plan and manage their businesses (see Chapter 3, Section 3.4.4 and Chapter 6, Section 6.4.5) (Thomson 2004b). For

these reasons, most producers did not understand or appreciate the benefits provided by management systems, and believe that they do not need them.

5.4.5 Pastoral producer commitment to EMS implementation

This pilot project's approach of providing a simple and flexible EMS process was successful in that it facilitated the recruitment of producers from 37 properties. As such, these producers were able to commence work on EMS without having to deal with an overtly complex system. Instead of starting with the full ISO 14001 EMS, the Pastoral EMS gave producers a basic entry level into EMS. Banney (2002), Ridley *et al.* (2003), Huhn *et al.* (2005) and Seymour *et al*. (2006) also recommended that producers begin with a simplified initial approach to EMS.

Also, producers had complete freedom to decide the topics to be addressed by their EMS, and in this way the Pastoral EMS was able to accommodate the varied reasons why producers wished to adopt EMS, as well as the varied levels of time and energy that they were able to invest in it. It is likely that freedom to choose the direction of their EMS and the rate and extent to which topics were addressed were factors in gaining initial producer involvement in this pilot project.

The majority of producers appeared enthusiastic and committed to EMS when working alongside the pilot project team, however, much of this enthusiasm disappeared once they no longer had that support and other commitments once again took priority. Factors that were a priority included keeping their stock alive during drought and trying to understand and meet the requirements of the recently introduced State Government Vegetation Management legislation. The importance of ongoing external support for producers developing and implementing EMS has also been reported by Thomson (2004b) and Huhn *et al.* (2005), and producers have also identified the need for, and importance of this support (Roberts 2004, Roberts *et al*. 2005).

Producers have indicated that they received few tangible benefits from Pastoral EMS development and implementation, and this is likely to be a factor that slowed their overall progress with EMS implementation. However, at this very early stage of EMS development and implementation, significant benefits cannot be expected.

To begin with, it was a deliberate policy of this pilot project to keep the first year and first cycle of EMS development and implementation simple, for the purpose of providing an easy entry point for producers, and to engender producer ownership in EMS by allowing them complete freedom to select the issues they would work on. Consequently, producers selected issues that were uppermost in their minds, particularly those that they were about to commence working on. This is certainly one of the reasons why producers reported that they were already aware of the environmental risks identified in their first cycle, and that EMS did not expand their thinking.

Also, it was the intention of this pilot project during the second year or second cycle of EMS implementation to provide more guidance to producers on significant environmental issues in their region and industry, and the management practices they could use to best address these. However, for a number of reasons, producer progress with the implementation of their first cycle stalled, they lost enthusiasm, and were therefore not receptive to this guidance. More time spent by producers developing their EMS with pilot project staff, and possibly a greater emphasis by the pilot project on the need to review, modify and expand their EMS from the

outset, are needed before producers could be expected to obtain significant benefits from EMS implementation. Consequently, this pilot project was not able to fully evaluate the on-ground and business benefits and costs of EMS implementation in the pastoral industry.

In addition to this, producers in western Queensland are not accustomed to formal planning processes and would prefer to be out making hands-on improvements to their properties rather than planning this on paper before they start (Lawrence *et al.* 1997, Carman *et al.* 1998, Pahl 2003). As mentioned earlier, producers do not currently value the planning and organisational functions of EMS and similar management systems, and therefore see little reason to adopt these.

Consistent with the above assertions, few producers opted to build on the Pastoral EMS in their own time despite its flexibility and encouragement from the pilot project. Most producers were content to work within the boundaries of the Pastoral EMS, and for a variety of reasons, including drought, a lack of time and a dislike of paperwork, they struggled to develop and implement this. This was at least partly because they viewed the Pastoral EMS as a fixed program, and did not understand the functioning of a continuous improvement management system. In this light, it is unlikely that producers understood how or why the range of EMS options offered to them could have been integrated into their EMS.

Based on observations by the pilot project team during meetings with producers, it was concluded that active and continued use of EMS and other management systems by pastoral producers would be restricted to those that want to spend more time improving their businesses and industry, and less time working in it as a labourer (Stephens 2005). These people are convinced that EMS or similar programs will be a future requirement for continued access to their land, water and vegetation. They are proactive, and thus wish to prepare themselves for that future, and take advantage of the free services available to early adopters. Furthermore, they wanted to influence the structure and content of programs that may eventually be imposed on them, so that these programs would work for them rather than against them. For the remainder of producers that participated in this pilot project, their EMS will probably remain as it was at the end of the project, as it is unlikely that they will continue to review and use it.

5.5 Conclusions

While producers identified some benefits from EMS implementation, such as an increased awareness of risks and development of clear objectives and targets to work towards, these did not motivate them to continue developing and implementing their EMS. It is unlikely that the majority of producers involved in this pilot project would have progressed this far without the coordination, encouragement and assistance provided by the pilot project team.

Producers regularly reported their frustration with the planning and documentation associated with the Pastoral EMS, and many subsequently made little progress with their EMS beyond that stage. Given that most benefits of EMS adoption are not immediate (Thomson 2004b, Watson and Galligan 2005) many producers lost interest before the benefits had time to emerge.

The lack of producer interest in and commitment to EMS is also probably indicative of the low priority given to strategic planning and business planning generally, and may partially explain why they struggle with programs that require goal setting and other forms of planning, documentation, monitoring and record keeping. This, combined with the current

drought has resulted in many producers appearing to lose enthusiasm for EMS with some even completely stopping implementation.

In the majority of cases, on-going EMS development and implementation by producers from western Queensland is dependent on external factors. Producers would continue with EMS if they received financial gain or market benefit, but this has not occurred and is not likely to happen for some time. In the absence of these incentives, other external drivers will be required. Training and assistance with EMS development, such as that provided by this pilot project, is one such external driver. Project staff encouraged producers to adopt EMS, delivered training and on-going assistance with EMS development, and regularly prompted them to keep pace with the schedule set by the project. While this has been effective, its impacts are short-term. As seen during this pilot project, in the absence of significant benefits, producers lost enthusiasm for EMS and implementation slowed or ceased.

Overall, there is a lack of effective external drivers for EMS implementation by producers, and in the absence of these, most producers currently implementing the Pastoral EMS will stop when the pilot project ceases in June 2006. At the present time, the internal business benefits that may arise from EMS implementation are not sufficient to encourage initial and on-going use of EMS.

6. Benefit-cost evaluation of EMS implementation

6.1 Introduction

Evaluation means to determine the value of something and assess its effectiveness (Mortiss 1993). Evaluation is critical to any project to provide stakeholders with information on project results, to determine the success or otherwise of the project and to see if the project achieved its intended outcomes (Roberts 1998, Roberts and Dobson 2003a).

This evaluation of EMS implementation in the western Queensland pastoral industry occurred towards the end of this pilot project. The main purpose of this evaluation was to record and compare the benefits and costs of developing and implementing the Pastoral EMS by producers. This evaluation also provided producers, who volunteered their time to trial EMS, with an opportunity to provide feedback on EMS and the pilot project. It also allowed pilot project staff to compile more objective information on the benefits and costs of EMS implementation, which could be compared with the more subjective observations made while working with producers (reported in Chapter 5).

This chapter describes the pilot project's evaluation which was conducted with participating producers who implemented the Pastoral EMS. It describes how the questionnaires were developed and how they were completed by producers, presents the results, and discusses the main findings of the evaluation.

6.2 Methods

The end-of-project evaluation consisted of two questionnaires, one developed by the pilot project team and the other by URS. This section of the report discusses the development of the Pastoral EMS questionnaire, the modification of the URS questionnaire, the content of both questionnaires and how they were completed by producers.

6.2.1 Questionnaire development

The following two sections describe the development of and main topics covered by both the pilot project and URS questionnaires.

Pilot project questionnaire

The pilot project questionnaire was developed with reference to a number of reports (Mortiss 1993, Roberts 1998, Roberts and Dobson 2003a, 2003b, Roberts *et al.* 2003) and advice from people knowledgeable in the field of evaluation (Kate Roberts, Roberts Evaluation Pty Ltd Melbourne; Lynda Coote, Bestfarms, Blackwood Basin Group, Western Australia; and Julie Williams, DPI, Victoria). This pilot project questionnaire was also compared with the URS questionnaire to ensure there was no duplication.

The pilot project questionnaire consisted of both open-ended and closed questions on why producers decided to join the EMS project, their initial and current understanding of EMS, their development and implementation of EMS, and their future plans. Respondents were also for additional comments on the evaluation, project or EMS generally. It also contained the questions on Pastoral EMS training which were discussed in Chapter 4 of this report.

URS questionnaire

URS developed a questionnaire for the purpose of evaluating EMS implementation across the 15 pilot projects. Topics covered in this questionnaire included producers' initial, current and long-term thoughts and expectations about the issues addressed by EMS, current and future EMS development and implementation plans, priority and target aspects of management, the impact of EMS on their rate of adoption of BMP and catchment plans, their intentions to continue using EMS into the future and what value they saw in being involved in the pilot project. Producers were also invited to make additional comments.

The pilot project team tailored a number of questions in the URS questionnaire so that they better suited this project and the pastoral industry, to ensure that participants understood the questions being asked and that relevant feedback was gathered. Question 3 of the URS questionnaire, concerning priority and target aspects of management, was modified to reflect the management issues appropriate to the pastoral industry of western Queensland. Questions 7 and 8 were modified, to be more closely aligned with the Pastoral EMS implemented by producers. Question 11, which asked producers if they planned to continue using EMS, was supplemented with an additional question asking for reasons why or why not? Further to this, producers were also asked if they planned to gain ISO 14001 certification in the future.

6.2.2 Completion of questionnaires

The end-of-project evaluation for this pilot project was conducted by three pilot project staff members who conducted face-to-face meetings on an individual basis with producers from 31 properties during December 2005 to February 2006. On average, it took producers 45 minutes to complete the pilot project questionnaire and one and a half hours to complete the URS questionnaire. The delivery and interpretation of the questionnaires was also discussed amongst the project team so that each member understood how the questionnaires were to be delivered and how to explain questions if producers had difficulty understanding them, to reduce the risk of introducing bias into the feedback process.

6.3 Results

This section presents the results from the Pastoral EMS and URS questionnaires, which were completed by 31 producers. Described below are the reasons why producers joined the project, their understanding of EMS and their thoughts about the types of issues EMS addressed initially, now and in the future. Also presented are results concerning current and future EMS development and implementation, along with priority and target aspects of management, other property planning and the value producers see in being involved in a pilot project.

6.3.1 Why did producers join the pilot project?

When the 31 producers surveyed were asked why they joined the pilot project (Pastoral EMS question 1), they provided a range of answers, with some mentioning multiple reasons (Figure 6.1). The most common response, mentioned by 15 producers, was that they were interested in using EMS for property planning. Eight producers were interested in learning about the EMS process and discovering what benefits could be gained. Five producers were interested in gaining recognition for their good land management practices and a further five thought that EMS would become a future requirement by government or industry. There were also one or two mentions of a number of other reasons.

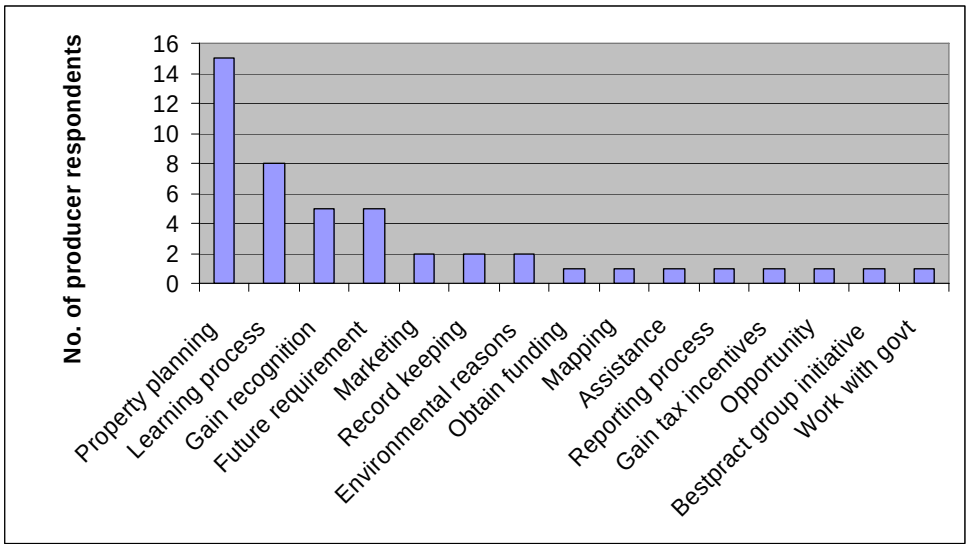


Figure 6.1. Reasons why producers decided to join the EMS project.

6.3.2 Producers' understanding of EMS

Described below are producers' responses to two open-ended questions about what they initially thought EMS was prior to joining the pilot project and what they understood EMS to be after going through the process.

Initial understanding

Thirty-one producers were asked what they thought EMS was prior to joining the project (Pastoral EMS question 2), and again a range of answers, with some multiple responses, were given (Figure 6.2). The most common response, mentioned by 10 producers, was that EMS was an environmental management tool. Seven producers were unsure as to what they initially thought EMS was and four producers already knew about EMS before joining the pilot project. Three producers thought it was a reason for more government control, it was about gaining proof and recognition for good environmental management and it was management based. There were also one or two mentions of a number of other reasons.

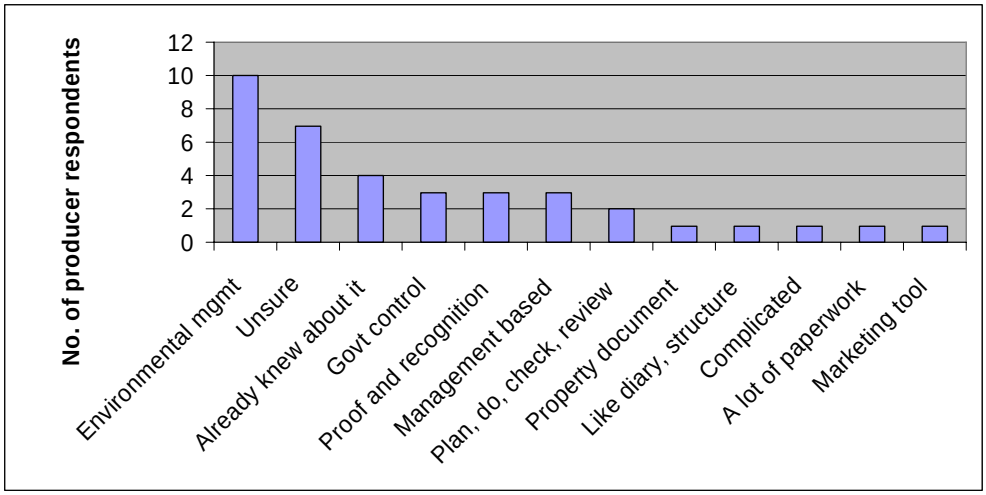


Figure 6.2. What producers thought EMS was prior to joining the pilot project?

Current understanding

Producers were then asked what they understood EMS to be after going through the process (Pastoral EMS question 6) (Figure 6.3). The main response, from 20 of the 31 producers, was that EMS was about property planning. Eleven believed it was about environmental sustainability and responsible management, and six thought it was about documentation. Four thought EMS was about recognition of good practices, and three said better production. Two producers thought that it was a process and it was time-consuming. Other responses, which only had single mentions by producers, (not shown in Figure 6.3) included that producers thought EMS was about identifying issues, monitoring, implementing sustainable production, improving management, environmental standards, evaluation, benchmarking, integration, a simple process, obtaining funding, marketing, confirming what they were already doing, economics, environmental management and assessing risks.

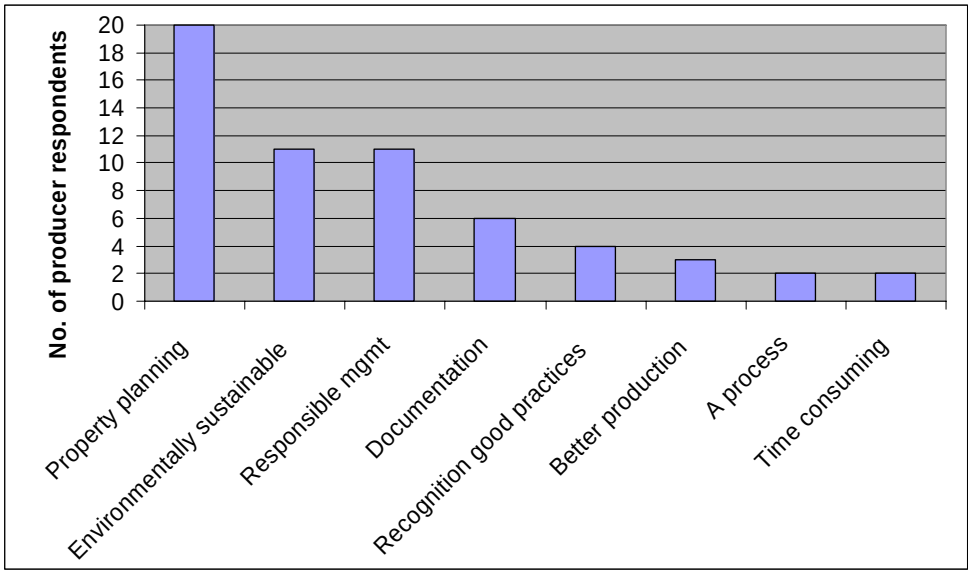


Figure 6.3. What producers thought EMS was after going through the process?

6.3.3 Producer thoughts about the issues addressed by EMS

Described below are producers' thoughts about the types of issues an EMS based approach to management would address. Producers were asked to rate on a scale of 1 'strongly disagree' to 5 'strongly agree' the same 24 issues in three different contexts (see Tables 6.1, 6.2 and 6.3). The three contexts were:

1. At the start of the pilot project, did you expect EMS to address these issues?;
2. After being through the pilot project do you think EMS will address these issues?; and
3. What reasons might encourage you to use an EMS based management system in 5-10 years?

Initial thoughts

Producers were asked what issues they initially thought EMS would address (URS question 1) concerning farm and business management, environmental management, product value and red tape (see Table 6.1).

Major findings concerning farm and business management (Table 6.1) indicated that the 31 producers surveyed initially believed (with a rating of 'agree' to 'strongly agree') that an EMS based approach to management would allow them to 'learn more about EMS' (29/31) and 'increase their understanding of sustainable land management' (26/31). Producers also felt that EMS would (with a rating of 'agree to strongly agree') 'motivate them to improve their business management' (22/31) and help them to 'sustainably manage their property for their children or for future sale' (20/31). In contrast, producers felt that an EMS would not (with a rating of 'disagree to strongly disagree') 'improve their time management' (25/31), 'reduce their production costs' (24/31) or 'help with succession planning and inclusion of others into the management of their business' (19/31).

In terms of environmental management (Table 6.1), the results indicated that the majority of the 31 producers initially believed (with a rating of 'agree to strongly agree') that an EMS based approach would allow them to 'demonstrate they are managing sustainably' (27/31), 'maintain access to natural resources' (25/31), 'strengthen their ability to address environmental issues' (24/31) and 'motivate them to improve their environmental management' (22/31). Only 13 producers thought that EMS would initially (with a rating of 'agree to strongly agree') 'improve their properties contribution to catchment health', eight were 'unsure' and 10 gave it a rating of 'disagree to strongly disagree'.

The main findings concerning product value (Table 6.1) were that around two-thirds of producers initially thought (with a rating of 'agree to strongly agree') that an EMS based approach to management would help them 'gain access to new markets' (20/31), around half thought that it would 'provide an eco-label recognising their environmental management' (15/31) and the same number thought it would 'make it possible to ask for a price premium' (15/31). Producers were evenly divided in their views on whether EMS would 'be required by their industry' or that it would help them to 'maintain access to current markets', with approximately half agreeing and half disagreeing.

For issues relating to red tape (Table 6.1), many producers thought (with a rating of 'agree to strongly agree') that an EMS based approach to management would help them to 'comply with current legal requirements' (20/31), 'avoid more stringent and prescriptive regulatory standards' (15/31) and get 'better access to government funding and services' (15/31). However, some producers also disagreed (with a rating of 'disagree to strongly disagree' that EMS would help them 'avoid more stringent and prescriptive regulatory standards' (9/31) and get 'better access to government funding and services' (10/31).

Table 6.1. Issues that producers initially thought, at the start of the pilot project, that an EMS based approach to management would address.

I thought an EMS based approach to management would:	**Strongly disagree**	**Disagree**	**Unsure**	**Agree**	**Strongly agree**	**Mean**
	1	**2**	**3**	**4**	**5**	
Farm / business management						
1. Help me to learn more about EMS	0	2	0	21	8	4.1
2. Help me to improve my property's productivity	1	5	8	13	4	3.5
3. Motivate me to improve my property business management	2	2	5	18	4	3.6
4. Help me to reduce my production costs	7	17	3	3	1	2.2
5. Help me to manage for extreme seasonal / environmental conditions	3	8	6	11	3	3.1
6. Help me to reduce my costs of environmental management	4	9	11	6	1	2.7
7. Help increase my understanding of sustainable land management	0	2	3	22	4	3.9
8. Help combine my management obligations into one system	2	7	8	8	6	3.3
9. Help me to sustainably manage my property for my children or for future sale	2	4	5	16	4	3.5
10. Help with succession planning and inclusion of others into business mgmt	4	15	7	5	0	2.4
11. Help improve my time mgmt to increase time spent with family or socially	9	16	4	1	1	2.0
Environmental management						
12. Help maintain access to natural resources on which my business is dependent	0	3	3	19	6	3.9
13. Help me to demonstrate that I manage my property sustainably	1	0	3	19	8	4.1
14. Motivate me to improve my on-property environmental management	1	3	5	16	6	3.7
15. Strengthen my ability to address environmental management issues	0	3	4	17	7	3.9
16. Improve my property's contribution to catchment health	2	8	8	9	4	3.2
Product value						
17. Provide an eco-label for my product that recognises my environmental mgmt	2	6	8	12	3	3.3
18. Be required by my industry	4	9	7	8	3	2.9
19. Help my business to maintain access to current markets	3	8	8	11	1	3.0
20. Help my business gain access to new markets	2	4	5	18	2	3.5
21. Make it possible to ask for a price premium for my products	1	9	6	12	3	3.2
Red tape						
22. Help me comply with current legal and legislative requirements	2	3	6	15	5	3.6
23. Help me avoid more stringent and prescriptive regulatory standards	3	6	7	11	4	3.2
24. Help my business get better access to government funding and services	2	8	6	14	1	3.1

Current thoughts

Now that producers had been through the pilot project and knew more about EMS, they were asked to rate the issues they now thought EMS would address (URS question 2) concerning farm and business management, environmental management, product value and red tape (Table 6.2).

The main findings in terms of EMS and farm/business management (Table 6.2) indicated that currently most producers 'agree' or 'strongly agree' that an EMS based approach to management was helping them to 'learn more about EMS' (29/31), 'motivating them to improve their business management' (21/31), helping them to 'sustainably manage their property for their children or for future sale' (21/31) and 'increasing their understanding of sustainable land management' (20/31). However, the majority of producers felt that at the present time EMS was not (with a rating of 'disagree to strongly disagree') 'improving their time management' (23/31), helping them to 'reduce their production costs' (20/31), 'reduce their environmental management costs' (18/31) or 'helping with succession planning and including others into the management of their business' (18/31). Producers were almost evenly split as to whether they rated it 'agree to strongly agree' or 'disagree to strongly disagree' that EMS was helping them to 'improve their productivity', 'manage for extreme seasonal or environmental conditions' or 'combine their management obligations into one system'.

In terms of environmental management (Table 6.2), most producers rated it 'agree' to 'strongly agree' that EMS was 'motivating them to improve their environmental management' (27/31), 'strengthening their ability to address environmental issues' (24/31) and helping them to 'demonstrate they are managing sustainably' (22/31). Only some producers agreed that EMS was 'improving their property's contribution to catchment health' (13/31) and helping to 'maintain access to the natural resources on which their business was dependent' (11/31). In fact, 14 producers 'disagree' to 'strongly disagree' that EMS was helping to 'maintain access to their natural resources' and nine that EMS was 'improving their property's contribution to catchment health'.

For the issues relating to product value (Table 6.2), most producers 'disagree' to 'strongly disagree' that EMS was helping them to 'maintain access to their current markets'(22/31) or 'gain access to new markets' (22/31), or 'making it possible to ask for a price premium' (22/31). Neither was it 'being required by their industry' (24/31) or 'providing them with an eco-label' (22/31).

Also, for the red tape issues (Table 6.2), some producers 'disagree' to 'strongly disagree' that EMS was helping them to 'avoid more stringent and prescriptive regulatory standards' (17/31), 'comply with current legal requirements' (14/31) or give them 'better access to government funding and services' (13/31).

Table 6.2. Issues that producers currently think, after being through the pilot project, an EMS based approach to management would address.

I now think an EMS based approach to management is:	**Strongly disagree**	**Disagree**	**Unsure**	**Agree**	**Strongly agree**	**Mean**
	1	**2**	**3**	**4**	**5**	
Farm / business management						
1. Helping me to learn more about EMS	0	2	1	21	7	4.1
2. Helping me to improve my property's productivity	2	9	6	13	1	3.1
3. Motivating me to improve my property business management	2	4	4	15	6	3.6
4. Helping me to reduce my production costs	5	15	6	3	2	2.4
5. Helping me to manage for extreme seasonal / environmental conditions	4	8	3	14	2	3.1
6. Helping me to reduce my costs of environmental management	3	15	4	9	0	2.6
7. Helping increase my understanding of sustainable land management	2	5	4	15	5	3.5
8. Helping combine my management obligations into one system	2	9	5	10	5	3.2
9. Helping me to sustainably manage my property for my children or for future sale	2	4	4	15	6	3.6
10. Helping with succession planning and inclusion of others into business mgmt	5	13	6	6	1	2.5
11. Helping improve my time mgmt to increase time spent with family or socially	7	16	5	3	0	2.1
Environmental management						
12. Helping maintain access to natural resources on which my business is dependent	4	10	6	7	4	2.9
13. Help me to demonstrate that I manage my property sustainably	2	3	4	14	8	3.7
14. Motivating me to improve my on-property environmental management	2	0	2	20	7	4.0
15. Strengthening my ability to address environmental management issues	2	0	5	17	7	3.9
16. Improving my property's contribution to catchment health	3	6	9	7	6	3.2
Product value						
17. Providing an eco-label for my product that recognises my environmental mgmt	4	18	4	5	0	2.3
18. Being required by my industry	6	18	3	4	0	2.2
19. Helping my business to maintain access to current markets	6	16	3	6	0	2.3
20. Helping my business gain access to new markets	6	16	2	6	1	2.4
21. Making it possible to ask for a price premium for my products	6	16	5	3	1	2.3
Red tape						
22. Helping me comply with current legal and legislative requirements	2	12	5	10	2	2.9
23. Helping me avoid more stringent and prescriptive regulatory standards	4	13	8	4	2	2.6
24. Helping my business get better access to government funding and services	4	9	7	9	2	2.9

Future thoughts

Producers were then asked what reasons (farm and business management, environmental management, product value and red tape) would encourage them to use an EMS based management system in five to ten years time (URS question 12).

For reasons relating to farm and business management (Table 6.3), most of the 31 producers felt that in the future EMS would help them (with a rating of 'agree to strongly agree') with a number of things including:

- 'increasing their understanding of sustainable land management' (23/31);
- 'improving their property's productivity' (22/31);
- 'motivating them to improve their business management' (22/31);
- 'combining their management obligations into one system' (20/31);
- 'sustainably managing their property for their children or for future sale' (20/31);
- 'managing for extreme seasonal or environmental conditions' (19/31);
- 'learning more about EMS' (18/31); and
- 'reducing their costs of environmental management' (17/31).

Producers were split in half as to whether they 'agree to strongly agree' (12/31) or 'disagree to strongly disagree' (10/31) that in the future EMS would help them to 'reduce their production costs'. They were similarly divided between 'help with succession planning and including others into the management of the business' with 13 saying they 'agree to strongly agree' and 11 saying they 'disagree to strongly disagree'. For the statement relating to whether EMS would help 'improve their time management', a mixed response was also received, with 13 producers not believing (with a rating of 'disagree to strongly disagree') that EMS would help with this in the future, 10 'unsure' and only eight rating it 'agree to strongly agree'.

In terms of environmental management (Table 6.3), the majority of producers believed (with a rating of 'agree to strongly agree') that in the future EMS will help to 'demonstrate that they are managing sustainably' (28/31), 'strengthen their ability to address environmental issues' (26/31), 'improve their environmental management' (23/31) and 'maintain access to their natural resources' (21/31). Only 17 producers believed that in the future an EMS will help 'improve their property's contribution to catchment health'.

Producer responses to product value and whether EMS would help address these issues in the future are also shown in Table 6.3. Most producers felt that in the future EMS would help them to address all the issues relating to product value (with a rating of 'agree to strongly agree'), such as 'gain access to new markets' (21/31), 'be required by their industry' (20/31), 'maintain current markets' (18/31), 'provide an eco-label' (17/31) and 'ask for a price premium' (17/31).

Table 6.3 also presents the results for whether producers believed that in the future an EMS will help with issues relating to red tape. The majority of producers believed that in the future EMS will help them to (with a rating of 'agree to strongly agree') 'avoid more stringent and prescriptive regulatory standards' (21/31), 'comply with current legal requirements' (26/31) and 'get better access to government funding and services' (24/31).

Table 6.3. Issues that producers thought an EMS based approach to management will address in the future (5-10 years).

I think an EMS based approach to management will continue to:	**Strongly disagree**	**Disagree**	**Unsure**	**Agree**	**Strongly agree**	**Mean**
	1	**2**	**3**	**4**	**5**	
Farm / business management						
1. Help me to learn more about EMS	4	3	6	16	2	3.3
2. Help me to improve my property's productivity	1	2	6	18	4	3.7
3. Motivate me to improve my property business management	1	2	6	17	5	3.7
4. Help me to reduce my production costs	2	8	9	9	3	3.1
5. Help me to manage for extreme seasonal / environmental conditions	2	4	6	16	3	3.5
6. Help me to reduce my costs of environmental management	3	5	6	15	2	3.3
7. Help increase my understanding of sustainable land management	3	2	3	18	5	3.6
8. Help combine my management obligations into one system	3	2	6	15	5	3.5
9. Help me to sustainably manage my property for my children or for future sale	2	3	6	16	4	3.5
10. Help with succession planning and inclusion of others into business mgmt	4	7	7	10	3	3.0
11. Help improve my time mgmt to increase time spent with family or socially	5	8	10	7	1	2.7
Environmental management						
12. Help maintain access to natural resources on which my business is dependent	1	2	6	13	8	4.2
13. Help me to demonstrate that I manage my property sustainably	1	0	2	21	7	4.1
14. Motivate me to improve my on-property environmental management	1	3	4	17	6	3.8
15. Strengthen my ability to address environmental management issues	1	0	4	18	8	4.0
16. Improve my property's contribution to catchment health	2	4	8	12	5	3.5
Product value						
17. Provide an eco-label for my product that recognises my environmental mgmt	1	4	9	13	4	3.5
18. Be required by my industry	2	2	7	15	5	3.6
19. Help my business to maintain access to current markets	0	3	10	15	3	3.6
20. Help my business gain access to new markets	0	2	8	17	4	3.7
21. Make it possible to ask for a price premium for my products	0	6	8	13	4	3.5
Red tape						
22. Help me comply with current legal and legislative requirements	0	2	3	22	4	3.9
23. Help me avoid more stringent and prescriptive regulatory standards	1	3	6	17	4	3.6
24. Help my business get better access to government funding and services	0	2	5	20	4	3.8

6.3.4. Current EMS development and implementation

Described below are the results from the Pastoral EMS and URS questionnaires concerning producer EMS development and implementation, with topics covered including:

- time and cost;
- whether producers working in groups found it useful and why, and if they would have developed the Pastoral EMS by themselves;
- elements of the Pastoral EMS that are being used and their opinion of these;
- whether EMS has influenced adoption of best management practices;
- any other benefits; and
- factors that have influenced producers' progress with EMS development and implementation.

Time taken for EMS development and implementation

To gain an understanding of the amount of time that producers spent participating in the pilot project, they were asked how many days they spent (URS question 4):

- learning about EMS;
- attending workshops or meetings;
- writing their environmental policy;
- documenting their risk assessment;
- understanding regulatory requirements;
- developing action plans;
- implementing action plans;
- collecting information and monitoring;
- developing documentation systems;
- completing a management review; and
- completing formal second-party and independent third-party audits.

Average amounts of time spent by producers on individual components of EMS are provided below (see Figure 6.4). However producers that had not yet participated in particular activities and those which had said their time commitment was on-going or did not provide a figure, were not included in these averages. Hence the time taken for each activity is only an average of those producers that provided a time-based response.

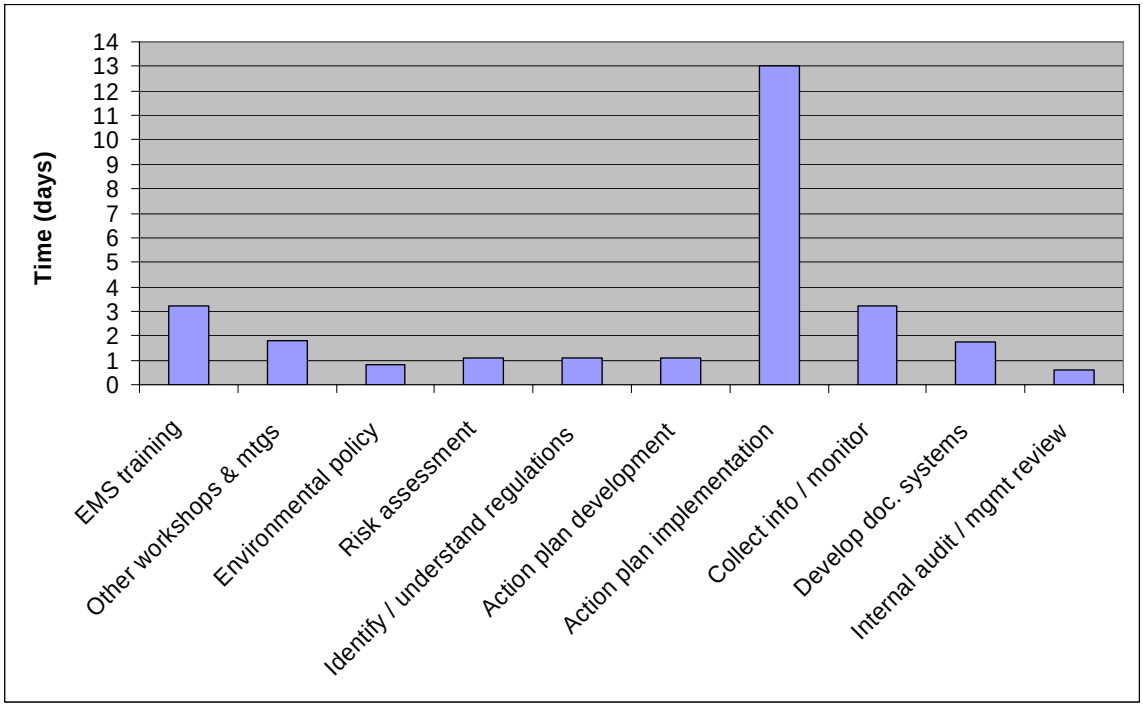


Figure 6.4. The average amount of time spent by producers participating in the pilot project.

Twenty producers reported that they had started to implement their action plans and had spent on average 13 days of their time doing this. This amount of time does not include 10 producers that said implementation was ongoing. Eighteen producers have also commenced monitoring and on average had spent just over three days on this. However, again this does not include eight producers that reported that monitoring was ongoing.

The next highest amount of time, also just over three days, was spent by the 31 producers on EMS training and learning about EMS. Also, just under two days were spent by 24 producers developing documentation systems (not including one that said it was ongoing). Similarly nearly two days were spent by 22 producers attending other workshops and meetings.

Thirty-one producers spent just over one day developing their risk assessment and action plans, and just under one day developing their environmental policy. While 19 producers spent some time (just over one day) identifying and understanding their legal requirements, 12 have not spent any time on this activity. Twenty-nine producers have completed a management review and took just over half a day to do this.

No time was spent by any of the producers undertaking a formal second-party audit as this was not a requirement of the Pastoral EMS, hence this is not shown in Figure 6.4. Also not represented in Figure 6.4 are the three producers who undertook an independent third-party audit for the environmental label Green Tick Natural, associated with their involvement in the Damara lamb marketing trial (see Chapter 7, Section 7.4).

Time producers spent in their offices

Producers then reported the proportion of their on-farm working week that was spent managing their enterprise, being the amount of time they spent working in their office (URS question 6). They ranked this on a scale of 1 to 5 as follows:

- 1 = all of their time is devoted to management operations, staff do hands-on work;

- 2 = most (>75%) of their time is devoted to management operations;
- 3 = much (50-75%) of their time is devoted to management operations;
- 4 = some (25-50%) of their time is devoted to management operations; and
- 5 = little (<25%) of their time was devoted to management operations.

The answers to these questions given by producers were averaged to give a ranking of 4.7, which indicates that little of their time was spent working in the office (Figure 6.5).

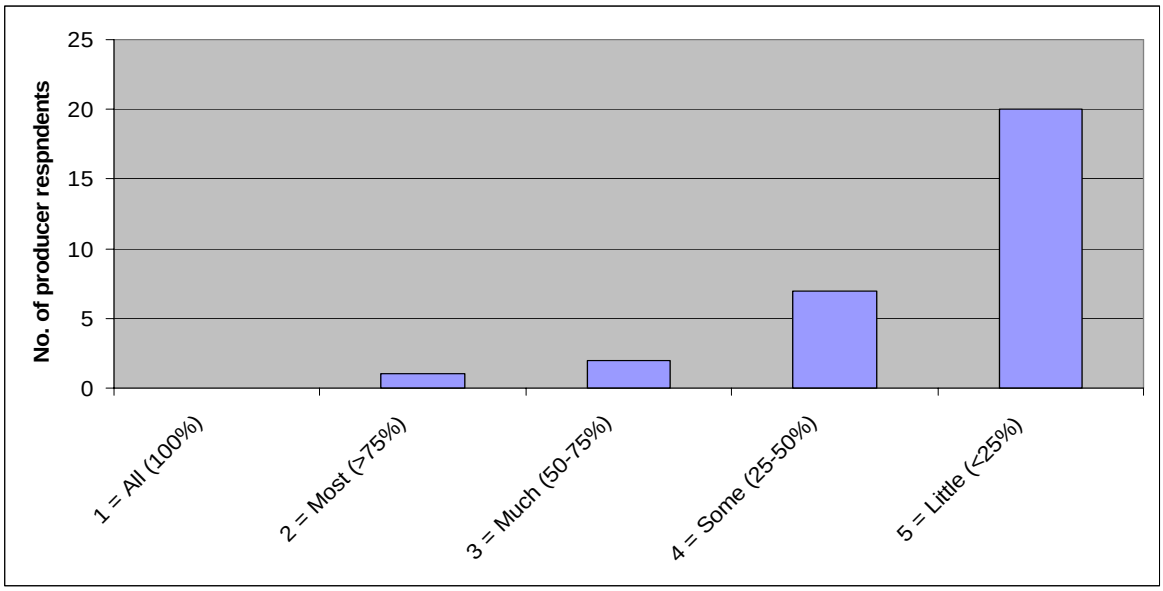


Figure 6.5. Time producers spend managing their enterprise/working in their office.

Cost of EMS development

Producers were then asked to estimate how much their participation in the pilot project has cost them, being their out of pocket expenses (URS question 5). This figure only included monetary expenses and did not take into account the amount of time that they spent participating in the EMS process, nor did it include costs of on-ground works. These figures were totalled to give an average of $514.

Should EMS development occur in a group or individually?

Twenty of the 31 producers that completed the questionnaire developed their Pastoral EMS as part of a group, and they were asked if they found it useful to do so (Pastoral EMS question 5). The other eleven producers developed their EMS individually and hence were not asked this question. An overwhelming 18 of the 20 producers thought that developing EMS in a group situation was useful. Only one producer was unsure and another thought that it was not useful.

The main reasons given as to why producers found it useful to develop their EMS as part of a group were that they could discuss ideas, share knowledge and exchange information to make better decisions. Plus, they liked the interaction and found this motivating. The one producer that was unsure if there was any benefit to developing their EMS as part of a group said that although they found no negative association with working in a group, they felt that they knew the other people too well and found nothing challenging in the discussion. The producer who felt that working in a group was not useful said that this was because the other people in the group were on different country and at a different stage in their life.

The 20 producers who developed their EMS as part of a group were then asked if they would have developed an EMS if they had to do it individually (Pastoral EMS question 5.1). Eleven producers indicated that they would not have developed an EMS individually, seven were unsure and only two producers would have developed an EMS by themselves.

Producers were then asked to give reasons as to why they would or would not have developed their EMS individually. Two main reasons were given for why they would not have developed their EMS by themselves. Firstly, they would not have known what to do without the contribution of ideas from others and that it would have been more difficult on their own. Secondly, they would not have had the inclination or motivation to complete the process as an individual and by working in a group it provided them with stimulation from others, keeping them more focussed and committed. The two producers who felt that they definitely would have implemented an EMS anyway commented that they wanted to do EMS to help them to think about what they were doing and they believed that it was going to help them to gain recognition for good land management practices.

The seven producers who were uncertain if they would have completed the EMS process on their own commented that prior to the pilot project they felt that undertaking an EMS was daunting, particularly ISO 14001. Other producers felt that they would not have gone ahead without the assistance of the group and that without being involved in the group they would not have been aware of the EMS process at all. Another factor listed by producers that would reduce their ability to undertake the EMS process individually was time. They felt more committed as part of the group and were more inclined to attend producer group meetings than make time for an EMS project team member to visit them on property as an individual.

The Pastoral EMS elements – producer use and opinion

To understand what features of the Pastoral EMS producers are continuing to put into practice, producers were asked to rate on a scale of 1 to 5 how they are using their environmental policy, risk assessment, objectives and targets, legal assessment, action plans, monitoring program and audit / management review (URS question 7). The rating scale used was: (1) 'didn't learn and don't use'; (2) 'learnt but not used since'; (3) 'learnt and used once'; (4) 'used now and again'; and (5) 'used and reviewed as required'. The average results are shown in Figure 6.6.

On average, the majority of producers indicated that they either use their environmental policy, risk assessment, objectives and targets, action plans and monitoring program 'now and again' (rating 4) or 'as required' (rating 5). Although the majority of this pilot project's producers did not undertake a legal assessment as part of the Pastoral EMS, they did consider legal issues that were associated with their action plans. In terms of the audit and management review process, on average producers indicated that they 'learnt and used this process once' (rating 3), 'now and again' (rating 4) or 'as required' (rating 5). This result is indicative of the fact that the majority of the pilot project's producers have only completed one cycle of the EMS process.

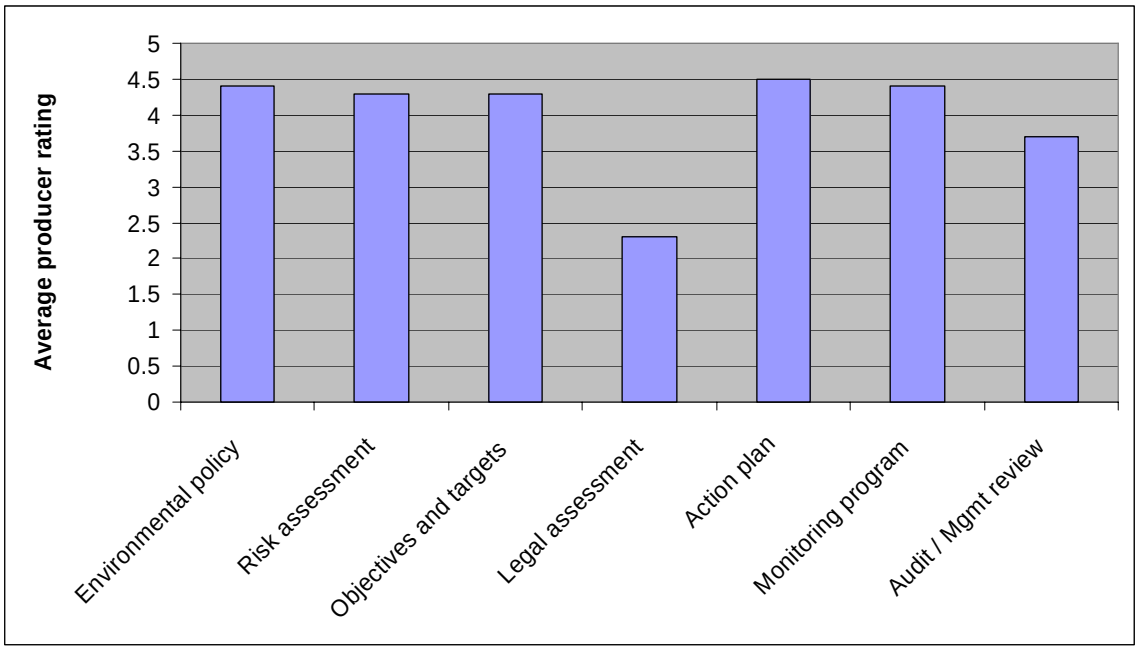


Figure 6.6. Features of the EMS process that producers are continuing to put into practice.

Producers were then asked their opinion of each element of the Pastoral EMS (URS question 8). The elements included environmental policy, risk assessment, objectives and targets, legal assessment, action plan, monitoring program and audit/management review. Producers rated these elements as (rating 1) 'disliked and don't use' or (rating 2) 'disliked but use, it has some value'. If a producer liked the element of the Pastoral EMS they were advised by URS to leave the option blank. The number of producers that selected each option is presented in Table 6.4 below.

These results indicate that overall, most of the 31 producers interviewed like the EMS process because they did not complete this table. Only one producer out of 31 felt that they 'disliked and don't use' the audit or management review process. All other elements are used by producers and only between two and five producers indicated that they 'dislike but use, it has some value'.

Table 6.4. Producers opinion of the elements of EMS.

Elements of EMS	**No. of producers that gave the rating**	
	1: dislike and don't use	**2: dislike but use, it has some value**
Environmental policy	0	2
Risk assessment	0	3
Objectives and targets	0	3
Legal assessment	0	5
Action plan	0	2
Monitoring program	0	3
Audit / management review	1	5

Does EMS improve adoption of BMP?

Producers were asked if EMS had changed their rate of adoption of best management practices (BMP) (URS question 13). The majority of producers, 21 out of 31, indicated that EMS had not changed their rate of adoption of BMP, while 10 producers said it had.

Producers indicated a number of reasons as to why EMS had not changed their rate of adoption of BMP, such as some producers were already using BMP and EMS had just made them more aware of these practices. Other producers felt that they needed to increase their understanding of BMP before adopting these practices, and some had not yet had the chance to adopt these practices due to the drought.

The 10 producers who felt EMS had changed their adoption of BMP on their property commented that EMS had made them more aware of BMP and the necessary requirements for adoption on their property. Others felt that EMS had allowed them to set goals to better achieve BMP on their property, and that by making EMS a part of their overall property management they were able to change their adoption of BMP. EMS had allowed them to develop a better record keeping system, it acted as the catalyst for BMP adoption and had allowed them to learn about specific BMP options.

Other benefits from EMS development and implementation

Producers were asked if they have gained any personal, family or community benefits by developing and implementing the Pastoral EMS (Pastoral EMS question 9). Some producers gave more than one answer and these answers were categorised into personal, family, community or none (see Figure 6.7). An overwhelming majority of producers indicated that the main benefits were personal (22 responses). There were only two mentions of family and three of community benefit. Eight producers indicated that so far they have gained no personal, family or community benefits from developing and implementing the Pastoral EMS. One producer said that this was because it was too soon to tell and other producers said that they were already implementing many elements of the Pastoral EMS before the pilot project commenced.

The personal benefits listed by producers included the development of better communication with both their partner and staff, documentation and prioritisation of problems, development of a structured property plan, targeting specific issues (e.g. workplace health and safety), gaining recognition within the community (e.g. from banks and regulatory bodies), obtaining funding (Queensland Rural Adjustment Authority and Envirofund), and an opportunity to socialise with other properties. Other personal benefits included the development and understanding of new and different ideas (a larger knowledge base), a broadening of their view point and a shift in attitude towards sustainability. Some producers also felt that they had become more responsible for their land and property outcomes.

Listed family benefits included that EMS has helped to give the younger people in their family more clarity and a better understanding of their role in management. This gave these younger family members the ability to identify target areas for change. Another producer felt that they were more aware of the risks to their family after developing and implementing the Pastoral EMS. Community benefits included show casing the positive attributes of their EMS, and greater social interaction of the producer community through group contact which allowed people to enhance and develop new social relationships.

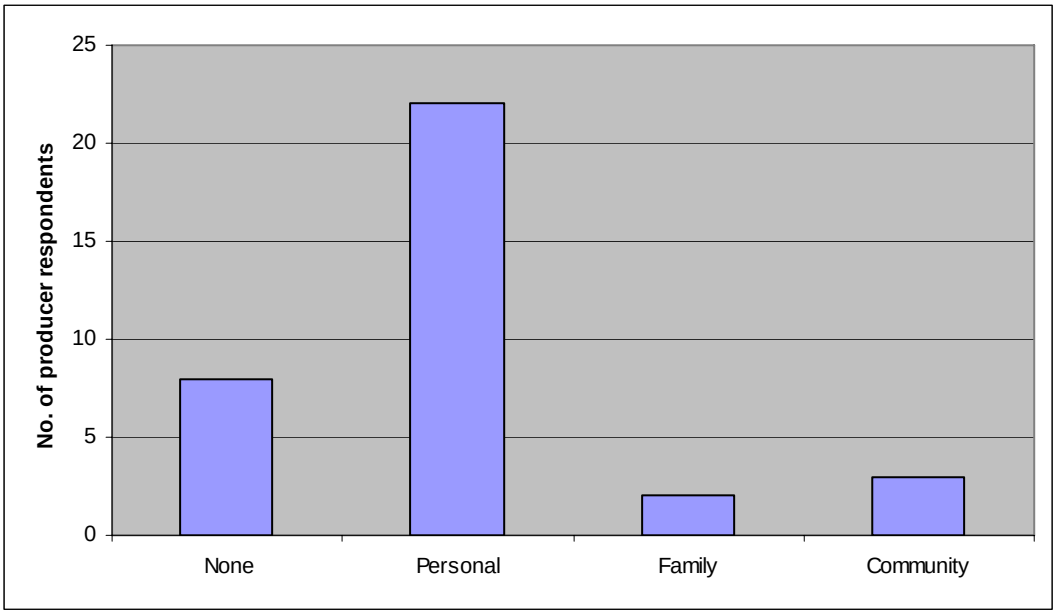


Figure 6.7. Benefits gained from developing and implementing the Pastoral EMS.

Factors that have influenced producers progress with EMS

Producers were asked to rate on a scale of 1 to 5, with 1 being 'no influence' and 5 a 'very high influence', whether a range of factors had influenced their current progress with Pastoral EMS development and implementation (Pastoral EMS question 7). The results from this question are displayed in Table 6.5 (note: for the factor concerning group support, only producers working in groups answered this question). The two factors that the 31 producers feel have had the greatest positive influence on their progress (with a rating of 'high to very high') were assistance from project staff (28/31) and the meeting schedule (19/31). The two factors with the greatest negative influence (with a rating of 'high to very high') were drought (21/31) and the amount of time they had available to work on their EMS (16/31). Access to funding for on-ground works and cost of implementation were rated as having no influence on EMS progress by 14 and 12 producers respectively.

Table 6.5. Factors that have influenced producer progress on the Pastoral EMS.

Factors influencing progress	**Ratings**				
	None	**Low**	**Medium**	**High**	**Very high**
Access to funding	14	4	3	6	4
Cost of implementation	12	5	4	6	4
Available time	4	3	8	9	7
Drought	6	2	2	3	18
Assistance from partner	7	4	7	7	6
Understanding of EMS process	8	5	6	9	3
Commitment to EMS	4	4	12	9	2
Group support	2	4	4	5	5
Meetings	4	1	7	9	10
Assistance from project staff	1	1	1	17	11
Other	0	0	1	3	2

Producers were then asked to choose just one of the options listed in Table 6.5 above (Pastoral EMS question 7), which had the most influence on their progress (Figure 6.8). The three factors that had the most influence on their progress were drought (9/31), available time (6/31) and assistance from project staff (5/31).

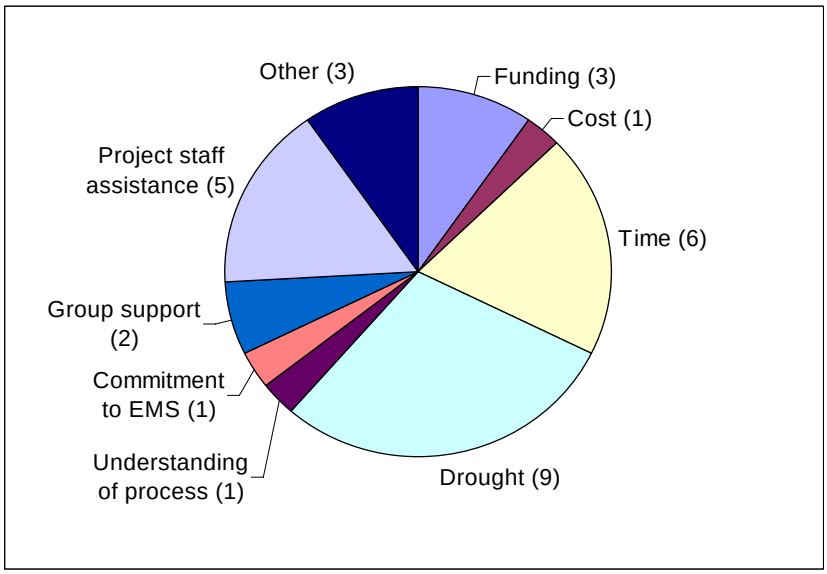


Figure 6.8. The one factor that most influenced producers progress with the Pastoral EMS.

6.3.5 Priority and target aspects of management for producers

Producers were asked a series of six interrelated questions on their priority and target aspects of management (URS question 3), and were advised to select the answer that was most applicable to them.

In the first question, the 31 producers surveyed were asked to rate the priority of all the given management issues in relation to their significance for ongoing or improved management (URS question 3.1). The ratings for each option were:

1 = Not significant;
2 = Minor significance;
3 = Significant;
4 = Very significant; and
5 = Extremely significant.

On average, livestock productivity rated the highest from 'very to extremely significant' and this was closely followed by livestock husbandry and financial planning (Figure 6.9). Ratings for whole farm planning, water management, pest animals, vegetation and pasture management, climate and drought and livestock infrastructure were all in the 'very significant' category.

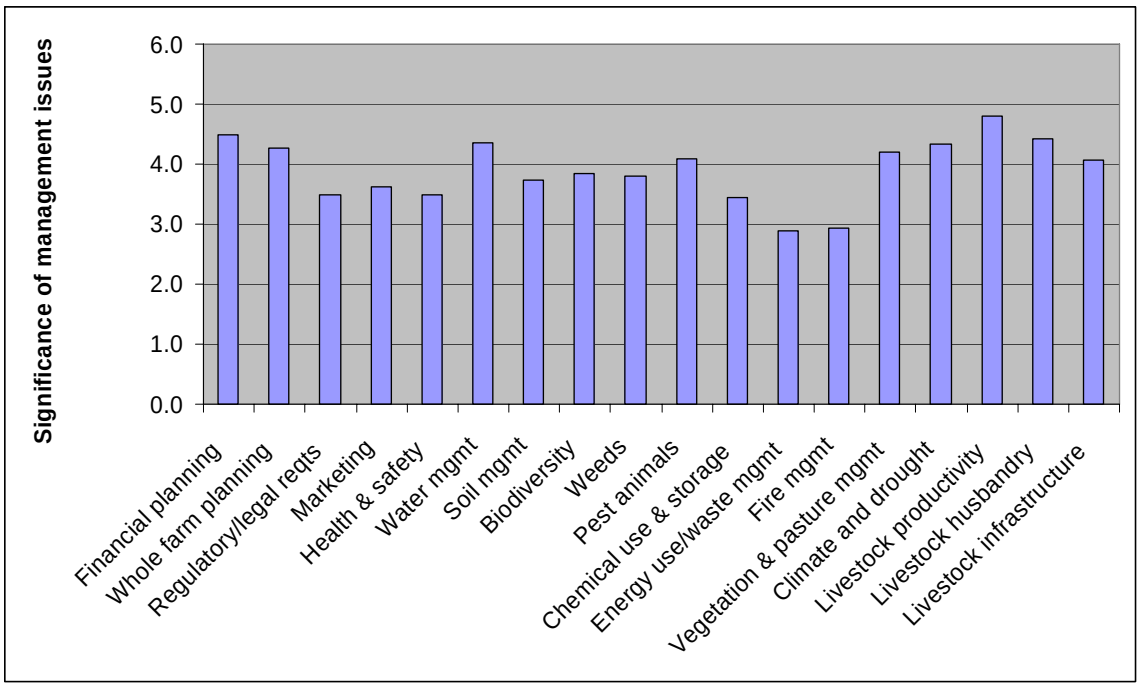


Figure 6.9. The significance of management issues for ongoing or improved management.

Following on from this question, producers were then asked how they were currently managing this issue (URS question 3.2). If the issue rated not significant or only of minor significance in URS question 3.1, then their responses were not included in the calculations for subsequent questions. For example, for energy use and waste management, only 15 of the 31 producers thought it was 'significant to extremely significant' so the averages that appear in Figure 6.10 (and Figures 6.11, 6.12, 6.13 and Table 6.6) are only for these 15 producers that thought the issue was significant or greater

The rating options for this question were:

1. have not considered the issue;
2. meeting legal compliance and assessing the risks informally and a self assessed management review/audit;
3. managing to a standard I think is acceptable, and doing the pastoral EMS risk assessment and a self assessed management review/audit;
4. managing to a standard I think is acceptable and doing the Pastoral EMS risk assessment and an externally assessed management review/audit; and
5. managing with BMP's, doing the Pastoral EMS risk assessment and an external management review/audit.

On average, most producers rated their current management of all issues as a two or three (Figure 6.10), meaning that they were meeting legal compliance or managing to a standard that they thought was acceptable.

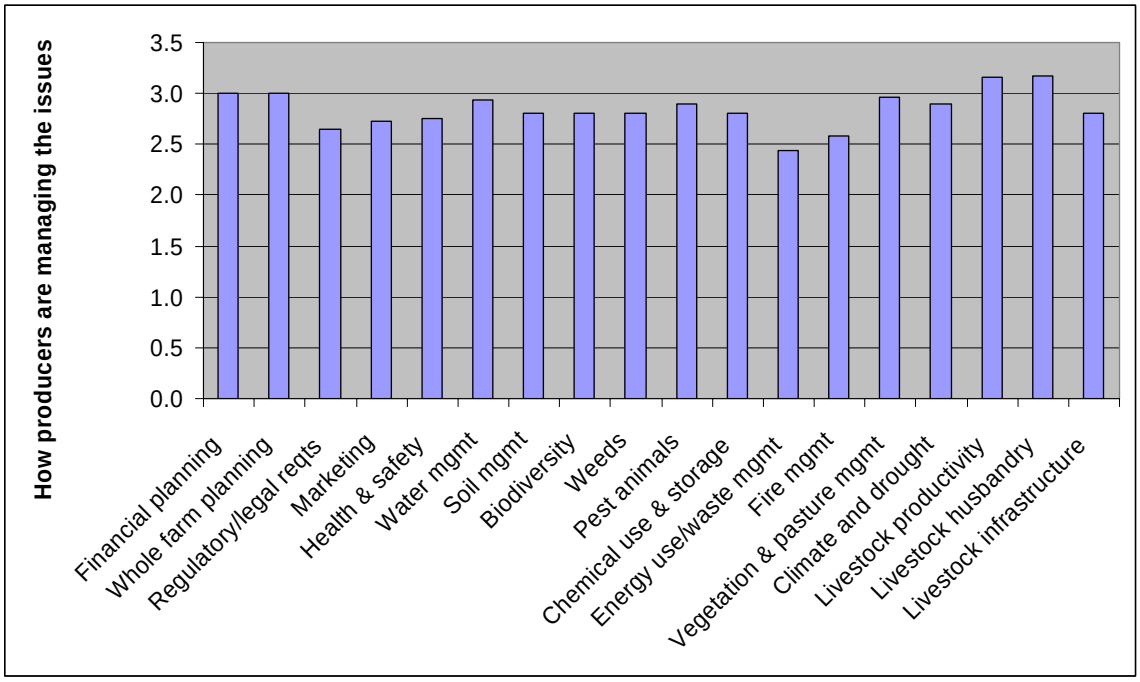


Figure 6.10. How producers are currently managing their significant to extremely significant management issues.

After this, producers were asked what their target level of management for each management issue would be over the next five years (URS question 3.3).

The rating options for this question were:

1. have not considered the issue;
2. meeting legal compliance and assessing the risks informally and a self assessed management review/audit;
3. managing to a standard I think is acceptable, and doing the pastoral EMS risk assessment and a self assessed management review/audit;
4. managing to a standard I think is acceptable and doing the Pastoral EMS risk assessment and an externally assessed management review/audit; and
5. managing with BMP's, doing the Pastoral EMS risk assessment and an external management review/audit.

The issues that rated the highest for target levels of management (Figure 6.11) were financial and whole farm planning, livestock productivity and husbandry, vegetation and pasture management and marketing.

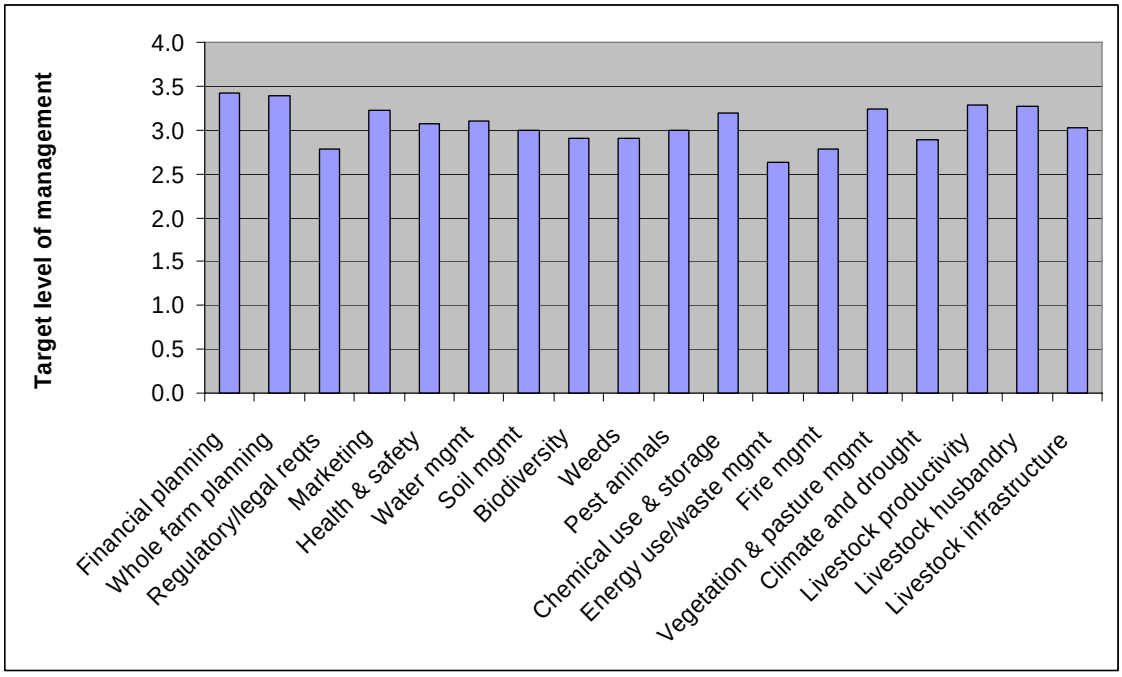


Figure 6.11. Producers target level of management for the next five years.

Producers were then asked the extent to which EMS had influenced their target level of management (URS question 3.4).

The rating options used in this question were:

1. Not at all;
2. Has reinforced my thinking on this but I would have dealt with it anyway;
3. Has supported my thinking on this issue to the extent that I have decided to improve my management efforts;
4. Has made me aware that the issue is much more important than I thought and that I need to improve my management effort; and
5. Has made me aware of an issue that I had little previous knowledge of, I will now address it.

On average, EMS had some influence on producers target level of management with most responses ranging between two and three, where EMS has either reinforced their thinking but they would have dealt with it anyway, to EMS having supported their thinking with a decision to improve management efforts (Figure 6.12). Generally, few producers thought that EMS had made them more aware of an issue.

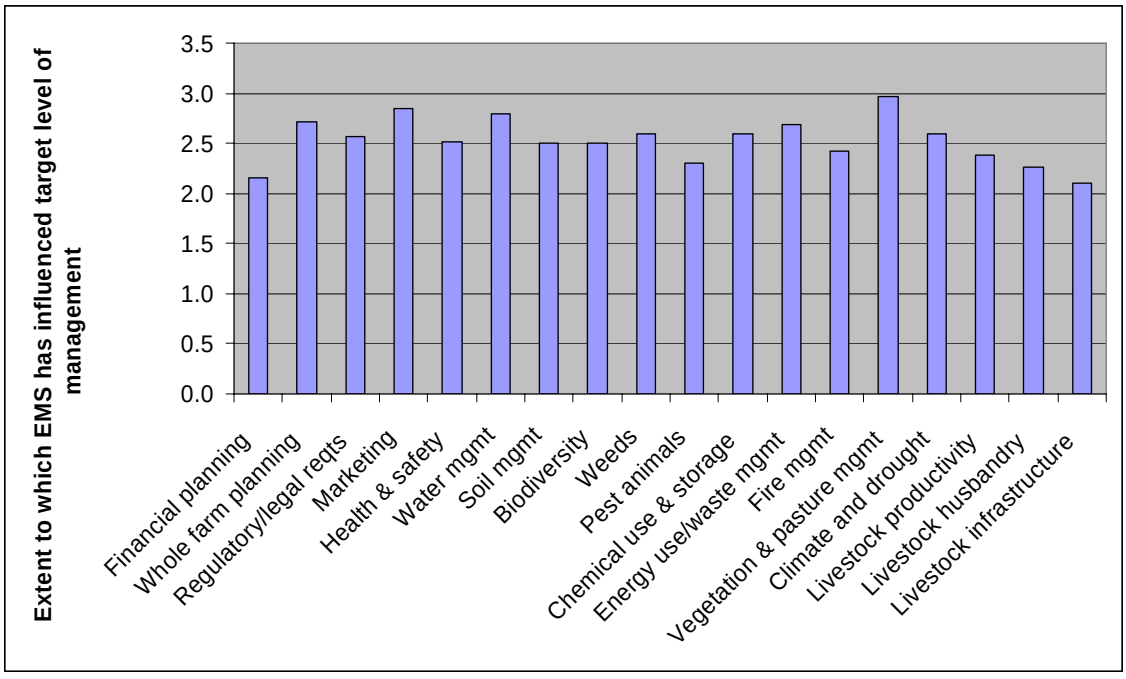


Figure 6.12. The extent EMS has influenced producers target level of management.

Following on from this question, producers were then asked whether they would address their significant management issues over the next five years to reach their target level of management (URS question 3.5).

The rating options used for this question were:

1 won't invest anything in this issue.
2 invest what it takes to manage the issue to meet legal compliance within 5 years.
3 invest what it takes to manage the issue with BMP to achieve farm/catchment targets within 5 years.
4 invest what it takes to manage issue with BMP to achieve farm/catchment targets within 5 years.
5 invest what it takes to manage issue with BMP to achieve farm/catchment targets within 2 years.

Producers expressed a strong desire to address water management, livestock production, husbandry and infrastructure to more than a minimum acceptable standard within five years (Figure 6.13). For issues such as energy use/waste management and regulatory/legal requirements, producers were only committed to managing these to meet their legal compliance.

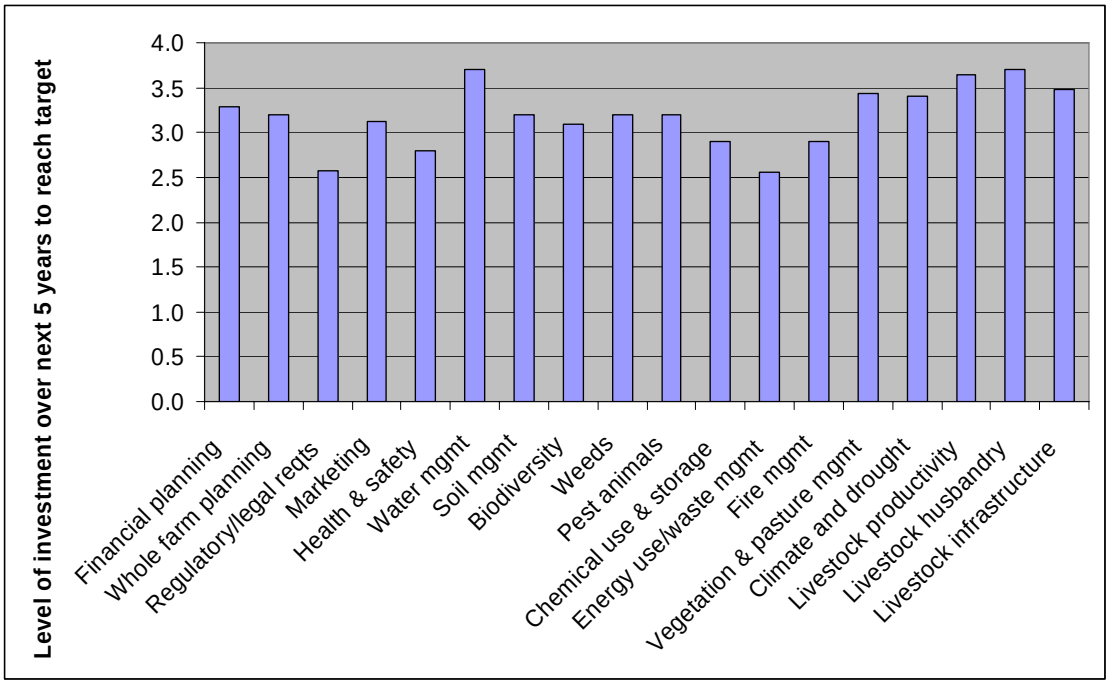


Figure 6.13. Measures producers will take to address a management issue over the next five years to reach their target level of management.

Producers were then asked what would make it difficult (eg cost, lack of recognition, time, lack of technical help or nothing) to address the significant issues (URS question 3.6). Once again, this question only applied to those respondents that said an issue was 'significant to extremely significant' and whom also reported that they would invest something in this issue to meet at least legal compliance.

Most notable is that for their significant issues many producers responded with, 'nothing is stopping me' which compliments producers' intent that, on average, they are going to address

these issues over the next five years (Table 6.6). Eighteen producers thought that for financial planning ‘nothing was stopping them’ from addressing this issue and nineteen said the same for whole farm planning and livestock husbandry. Interestingly, 12 producers thought that the ‘investment costs were to high’ for livestock infrastructure and eight thought ‘costs were also too high’ for water management. ‘Time and labour constraints’ and ‘costs are more than benefits’ were two other issues that featured prominently in what was making it difficult for producers to address their significant issues.

Table 6.6. Factors which are making it difficult for producers to address their significant management issues.

Management Issues	**Investment costs are too high**	**Lack of financial help**	**Costs are more than benefits**	**Lack of community recognition**	**Time or labour constraints**	**Neighbours aren't doing it – won't work without cooperation**	**Don't know what to do – lack of technical help**	**External preconditions not in place**	**Nothing is stopping me**	**Low priority**
Financial planning	3	3	0	0	4	0	0	0	18	0
Whole farm planning	3	1	0	0	6	0	0	2	19	0
Regulatory/legal requirements	0	0	3	0	2	0	2	0	5	1
Marketing	3	1	4	2	2	0	3	3	8	1
Health & safety	2	0	3	0	0	0	1	0	10	1
Water management	8	1	5	1	3	0	0	1	11	1
Soil management	5	4	4	2	4	0	2	1	6	0
Biodiversity	2	2	4	3	2	0	3	4	7	1
Weeds	3	2	4	0	6	2	1	0	9	1
Pest animals	0	1	1	3	4	3	0	1	11	2
Chemical use & storage	0	1	1	0	2	0	0	0	13	1
Energy use/waste management	1	0	0	0	2	0	1	1	2	2
Fire management	0	0	1	0	2	0	0	3	7	0
Vegetation & pasture management	9	2	0	2	2	0	0	2	10	0
Climate & drought	7	1	1	0	2	0	1	5	10	0
Livestock productivity	4	0	3	0	2	0	1	3	15	0
Livestock husbandry	1	0	1	0	4	1	1	1	18	0
Livestock infrastructure	12	0	1	0	3	0	0	0	10	0

6.3.6 Property/catchment planning, and monitoring conducted by producers

Outlined below are the results of producers' responses to general property management questions. The aim of these questions was to focus on the management activities that involved planning (property and catchment) and monitoring.

Property planning

When producers were asked what type of plans they used to run their business (URS question 20), only nine noted that they had either 'a written or formal business plan' (Table 6.7). Most business planning, for 22 of the 31 producers, was done either 'in their head' or accompanied with 'some minor documentation'. The results were similar for QA and OH&S plans. In contrasts, 23 of the 31 producers thought that they had a 'formal or written' environmental management plan, mainly as a result of having an EMS.

Producers were then asked how frequently they refer to (URS question 21) and update (URS question 22) these plans (also see Table 6.7). For those producers that do keep written or formal management plans, the majority referred to and updated these plans at regular intervals.

Table 6.7. Summary of the types of plans producers use to run their property.

Type of Plan	No structured plan	Plan in my head/some minor documentation	Formal written plans				
			Has formal or written plan	Referred to at regular intervals	Not referred to at all	Updated on a regular basis	Not updated at all
Business plan	0	22	9	9	0	7	2
Environmental management plan	0	8	23	20	3	18	5
Quality assurance plan	6	15	10	10	0	9	1
Occupational health and safety plan	3	22	6	6	0	5	1

Environmental monitoring

Producers were asked if they do any environmental monitoring, such as monitoring for water quality, erosion and weeds (URS question 23). Producers were encouraged to choose more than one option as this allowed for the fact that in some areas of monitoring producers implement a formal procedure, whereas in others the procedure is much less formal. Eight producers do their monitoring 'in their head' and 18 keep 'notes in their diary' as an informal monitoring system. Sixteen producers said that they had a 'system of their own, including written records, data or photo sites', and 10 have a 'formal monitoring system incorporating accepted methods and standards'. None of the producers said that they had no monitoring system at all.

The issues monitored by producers including pasture, weeds, vegetation regrowth and encroachment, and stock numbers and condition are shown in Figure 6.14. Pasture monitoring was the most common monitoring activity with 23 producers monitoring this. While this information is not included in Figure 6.14, of those 23 producers, five used the formal pasture assessment tool GRASS check (see Forge 1994) annually. A further nine used a photo site to monitor their pasture (one producer does this quarterly, four producers did this at six-monthly

intervals and another four did this annually) and the remaining nine producers carried out a visual assessment of their paddocks as they drove through them.

Fifteen producers monitor weeds visually (Figure 6.14), 10 said they monitor weeds constantly, four monitor weeds after rain, and one does this every six months. Vegetation regrowth and encroachment is monitored by 11 producers, with only one of these monitoring for regeneration purposes, the rest are monitoring regrowth and encroachment that is unwanted. Six producers noted that they visually monitor for feral animals and six also said they monitor erosion visually, especially after rain events. Other types of monitoring carried out by fewer producers are also shown in Figure 6.14.

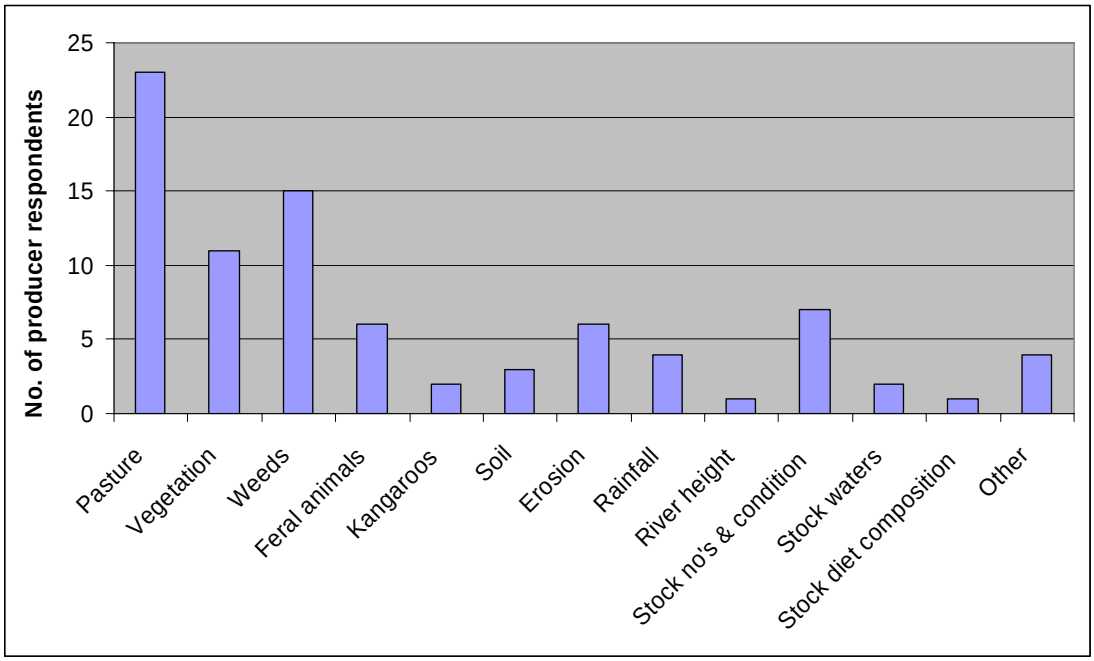


Figure 6.14. The issues monitored by producers as part of their property management.

Catchment or natural resource management planning

Producers were asked if they knew of a catchment or natural resource management plan that was in place for their area (URS question 24a). Twenty-eight of the 31 producers were aware of a catchment or natural resource management plan for their region. Following this, the 28 producers that were familiar with the catchment or natural resource management plan were asked a number of other questions including:

- how familiar they were with the contents of these plans (URS question 24b);
- how important they thought the management of their property was to achieving these plans and why (URS question 24c);
- whether their EMS was developed with reference to these plans (URS question 24d); and if so,
- were they able to link actions within their EMS to these plans (URS question 24e).

When producers were asked how familiar they were with the contents of the catchment or natural resource management plans (URS question 24b), only two felt ‘very familiar’ with these plans, 13 ‘somewhat familiar’ and 13 ‘not at all familiar’. Producers were then asked how important they thought the management of their property was to the objectives and outcomes of the catchment or natural resource management plans (URS question 24c). Eight

thought that it was ‘very important’, 16 thought it was ‘somewhat important’ and four thought it was ‘not important at all’.

When these 28 producers were asked for reasons why they thought the management of their property was important/unimportant to the objectives and outcomes of these plans (also URS question 24c), 16 displayed a whole of catchment understanding with comments such as, ‘our enterprise relies on a healthy catchment’, ‘we make up a portion of that region – so management of this portion directly impacts’ and ‘what we do affects downstream properties and it’s also in our best interest to manage our enterprise sustainably’. Three producers showed a limited understanding of the role of catchment planning and four appeared to be only focussed on waterways when thinking of a catchment. Comments from these producers included, ‘we are only a small area and are therefore not very important, but we still have to make a contribution’, ‘there is not a lot of runoff in this country’, ‘the water that runs off here (our property) is clean and there are no weeds here’ and ‘catchment planning is all about water and we live on a river’.

One producer that thought their management wasn’t important to the plans objectives and outcomes commented that ‘(I) don’t know what the catchment plan says, so (I) don’t know how important the management of our place is to it’. Two other producers didn’t answer the question very well and instead talked about legislation and funding access, and two chose not to respond.

Following this, producers were asked if their EMS was developed with reference to these catchment or natural resource management plans (URS question 24d). Seven producers thought that the environmental planning they did on their property (usually their EMS) was developed with reference to these plans and 21 said that it wasn’t. Those producers that had developed their EMS with reference to these plans were then asked if they were able to link their actions within their EMS to these plans (URS question 24e), and all seven of these producers thought that they were able to do this.

6.3.7 Future EMS development and implementation

Described below are the results from the surveys concerning future EMS development and implementation. Topics covered include producers' intentions to continue using EMS, factors that would encourage them to keep going, improvements to the process and whether EMS should be promoted to other producers in their industry or region.

Will producers continue using EMS?

When producers were asked whether they would continue using EMS to manage their property after the pilot project ends, 27 of the 31 respondents said yes (URS question 11). When asked for reasons why they would continue using EMS (also URS question 11), a wide range of responses were received, with some producers giving more than one answer (see Figure 6.15). The two main reasons mentioned by producers were the documentation benefits, particularly to demonstrate to others that they are looking after the environment (11 producers), and to improve their management leading to improvements in production and the environment (10 producers). Marketing and other financial rewards were mentioned by five producers and the structural benefits provided by the EMS process was mentioned by four producers. A number of other reasons were also mentioned by three or less producers.

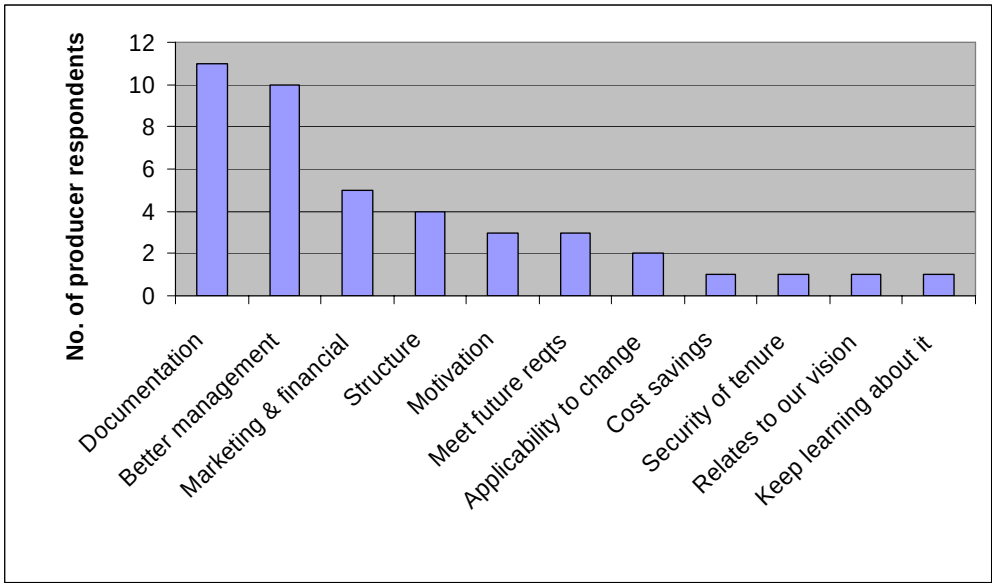


Figure 6.15. Reasons identified by producers for continuing to use EMS.

The two producers that were unsure if they would continue to use EMS responded that it depended on future assistance and legal requirements. If there was going to be assistance then one of these producers would continue with EMS, while the other said that if EMS assists them to meet future legal requirements then they would also continue with it. The two producers that said they would not continue to use EMS believed that the time they had spent documenting their EMS was time wasted.

The 27 producers that said they would continue using EMS were then asked if they might progress to ISO 14001 certification in the future (URS question 11). Only four said yes, 11 said no and 12 were unsure.

Improvements to the EMS process

Of the 31 producers that were asked to identify improvements to the EMS process (URS question 15), nine could not think of any. For those that could, a range of suggestions were received, with some producers offering more than one improvement (Figure 6.16). The two main improvements identified were to continue using a simple version of EMS and not the entire ISO 14001 standard (seven producers), and to provide more guidance on the content of the system, particularly in terms of best management practices (seven producers). Five producers also suggested that the benefits of EMS should be promoted more, while three suggested that it would an incentive if EMS was recognised by others, particularly the government. A number of other improvements were also mentioned by individual producers.

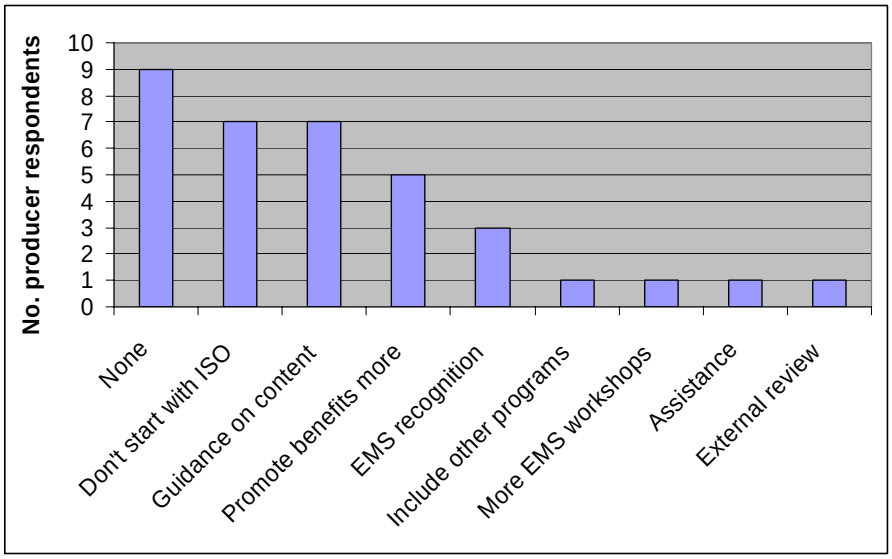


Figure 6.16. Producer suggestions for improvements to the EMS process.

Factors that would encourage producers to further develop and implement EMS

Producers were asked an open-ended question as to what would encourage them to further develop and implement their Pastoral EMS (Pastoral EMS question 8). This resulted in a wide variety of responses, with some producers providing more than one answer. Twelve producers responded that a financial incentive, primarily access to funding (Figure 6.17) would encourage them to keep going with EMS. The next most common response, with six, was ongoing assistance from someone to help with the development of EMS. After this, the next most common items, with four responses each, were good seasons, more time, getting recognition for what they were doing and if it was a market requirement. A number of other factors were mentioned by three or less producers.

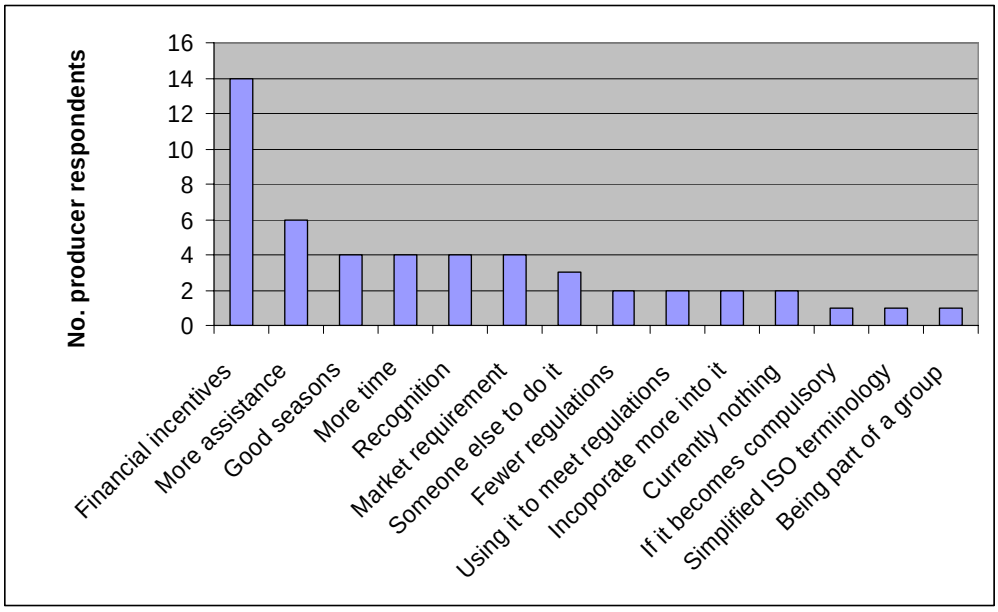


Figure 6.17. Factors that would encourage further EMS development and implementation.

Producers were then asked to rate on a scale of 1 to 5, with 1 being ‘not at all useful’ and 5 being ‘very useful’, whether a range of factors (such as assistance, more information, training, industry support and marketing or financial incentives) would encourage them to further develop and implement the Pastoral EMS (Pastoral EMS question 6.1) (Table 6.8).

More than half of the 31 producers (ranging from 18 to 28 producers) indicated that eight of the 11 listed factors would be ‘useful’ to ‘very useful’ in encouraging them to further develop and implement the Pastoral EMS (Table 6.8). These included livestock management training (18/31), continued meetings (19/31), business management training (19/31), industry support (20/31), continued assistance (24/31), a national label or brand (25/31), market benefits (26/31) and financial incentives (28/31).

In comparison, there was much less support (with a rating of ‘useful to very useful’) for more involvement from partner (9/31), more information about EMS (9/31) and more direction from industry (13/31).

Table 6.8. How useful would the following factors be in encouraging producers to further develop and implement the Pastoral EMS.

Encouraging factors	**Ratings**				
	Not at all useful	**Slightly useful**	**Unsure**	**Useful**	**Very useful**
Continued meetings	6	2	4	14	5
Continued assistance	1	2	4	12	12
More information about EMS	8	9	5	6	3
Business management training	4	3	5	14	5
Livestock management training	3	5	5	14	4
More involvement from partner	13	6	3	5	4
Industry support	3	1	7	12	8
More direction from industry	8	2	8	9	4
Financial incentives	1	1	1	12	16
Market benefits	1	2	2	13	13
National label or brand	0	2	4	9	16
Other	0	0	0	2	5

Producers again provided a wide range of responses (with some providing more than one) when asked to choose the one factor, from the list in Pastoral EMS question 6.1 (as per Table 6.8 above), which would most encourage them to further develop and implement their Pastoral EMS (Pastoral EMS question 6.2). The two main factors that would encourage producers to further develop and implement the Pastoral EMS were market benefits (12/38) and financial incentives (9/38), accounting for 21 of the 38 responses (see Figure 6.18).

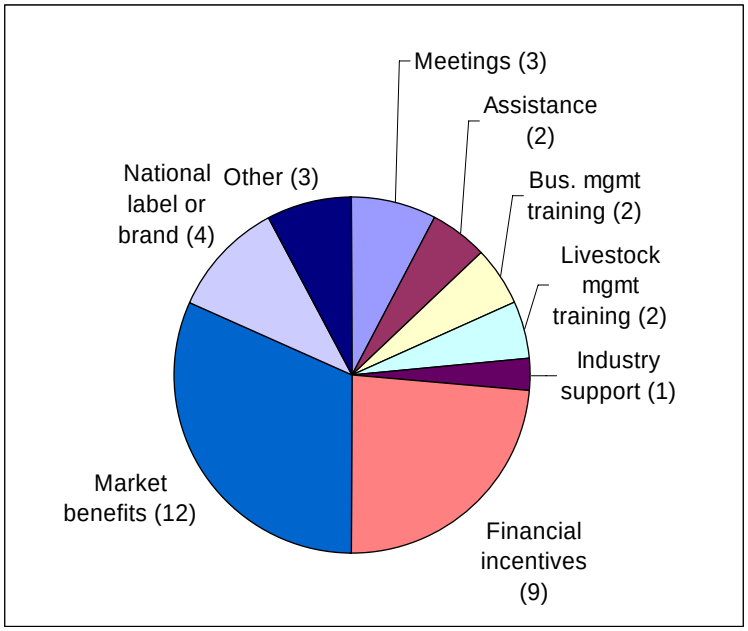


Figure 6.18. The one factor that would most encourage producers to further develop and implement the Pastoral EMS.

Promotion of EMS to others

Twenty-three of the 31 producers said yes when asked whether they have or would recommend EMS to other producers in their industry or region (URS question 14). Only six of the producers would not recommend EMS and two were uncertain. Those producers that said yes also provided some qualifiers to their answers such as they would only recommend it to certain people and only if there were benefits. One producer also mentioned that while they would recommend it they couldn't think of anyone that would want to do it, while another producer had already recommended it to someone else. Those that said they would not recommend EMS to others commented that they don't like to tell others what they should or shouldn't do, and they would not recommend it until they could show some real results.

Producers were then asked whether EMS should be promoted for widespread adoption in their industry or region (URS question 16), with 19 saying yes, 11 no and one unsure. Comments from those that responded positively included that we need to do this to create uniformity across our industry, as the more producers that do EMS, the better it would be for gaining funding and government recognition. Of those that responded negatively, some of the comments were that it should never be made compulsory, rather it should be an individual or personal management decision. They also said it was unlikely a large number of producers would take it up as it could become an expensive waste of time. There are currently not enough benefits to doing EMS, but perhaps in the future this would change if the government recognised its importance.

Those that responded that EMS should be promoted for widespread adoption were then asked who should manage such a process (URS question 17) and who should fund it (URS question 18), with a number of producers providing multiple responses. About half of the producers thought that the government should manage and fund the promotion of EMS for widespread adoption (Figures 6.19 and 6.20), and the next most common response was that this should be done by industry or catchment groups. Only two producers thought that producers should also contribute towards funding the promotion of EMS for widespread adoption.

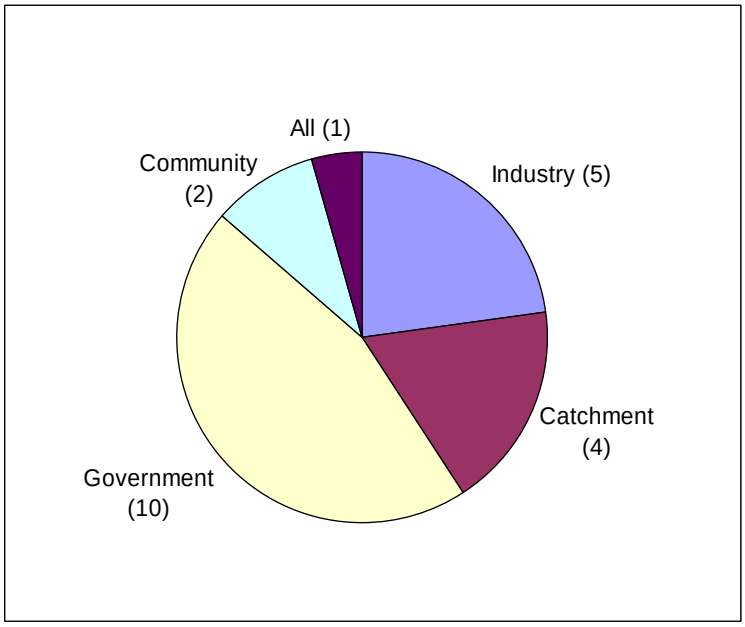


Figure 6.19. Producers' thoughts on who should manage the promotion of EMS for widespread adoption in the industry or region.

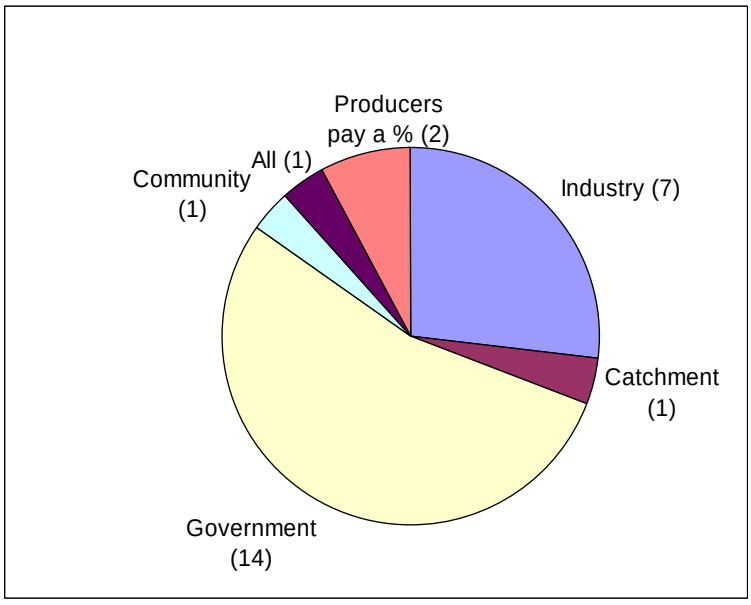


Figure 6.20. Producers' thoughts on who should fund the promotion of EMS for widespread adoption in the industry or region.

6.3.8. Do producers see value in being involved in a pilot project?

When asked whether their involvement in the pilot project had been worthwhile (URS question 9), 29 of the 31 producers responded positively (with a rating of 'yes' and 'very much so'), and only two had not found it of value (with a rating of 'no' and 'absolutely not').

Producers were then asked to give reasons as to why they had or had not found being involved in the pilot project worthwhile (also URS question 9). The one producer that said absolutely not provided no extra comments, while the one that responded no, said that they were just the managers of the property, the owner was not interested in EMS, and so far, they had not gained any benefits from doing it.

Those that found the pilot project worthwhile provided a wide variety of responses when asked for reasons why (Figure 6.21). The two most common reasons as to why producers found their involvement in the pilot project worthwhile was because it gave them a structured and documented plan (19 responses) and it helped them to learn about EMS (11 responses). Five producers also commented that it provided them with the motivation to take action, another five liked the group discussions, and four said that it improved their awareness of environmental issues. A number of other factors were also mentioned by three or less producers.

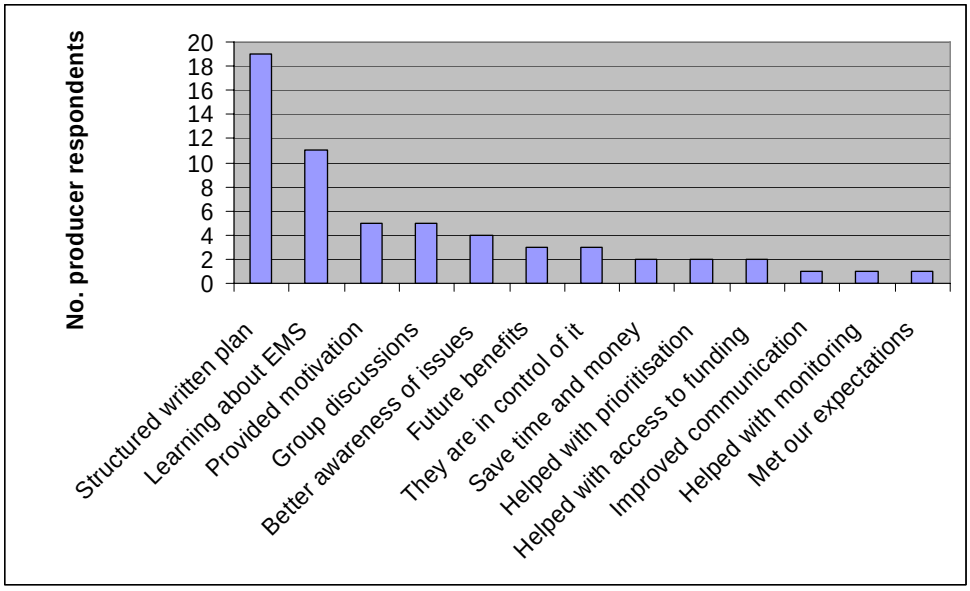


Figure 6.21. Reasons why producers found their involvement in the project worthwhile.

Finally, producers were asked, with the value of hindsight, whether they would do EMS over again (URS question 10).Twenty-four producers responded favourably (with a rating of 'yes' and 'very much so'), five were uncertain and two would not do EMS over again (with a rating of 'no' and 'absolutely not').

6.3.9 General evaluation comments from producers

Presented below are some of the general comments obtained from producers at the completion of both the Pastoral EMS and URS questionnaires.

General comments from the Pastoral EMS questionnaire

At the conclusion of the Pastoral EMS questionnaire, producers were given the opportunity to provide any other comments they wished to make. Twelve of the 31 producers had no further feedback, while 19 provided other comments, with some making more than one. The comments provided by producers were categorised under the headings of future requirements for continuing with EMS, benefits and improvements to the EMS training process, and reasons why producers did not like EMS. These comments are reported below.

Future requirements for continuing with EMS

Of the 11 producers that provided feedback (with some providing more than one comment) on the future requirements for continuing with EMS (Figure 6.22), five producers thought that recognition by markets, industry and government was an important aspect. Three producers thought that they needed more incentives, time and a good season to help them keep going. Two producers wanted an eco-label or markets requesting EMS products, two thought it should not be made compulsory and another two said that they need to continue what they had started.

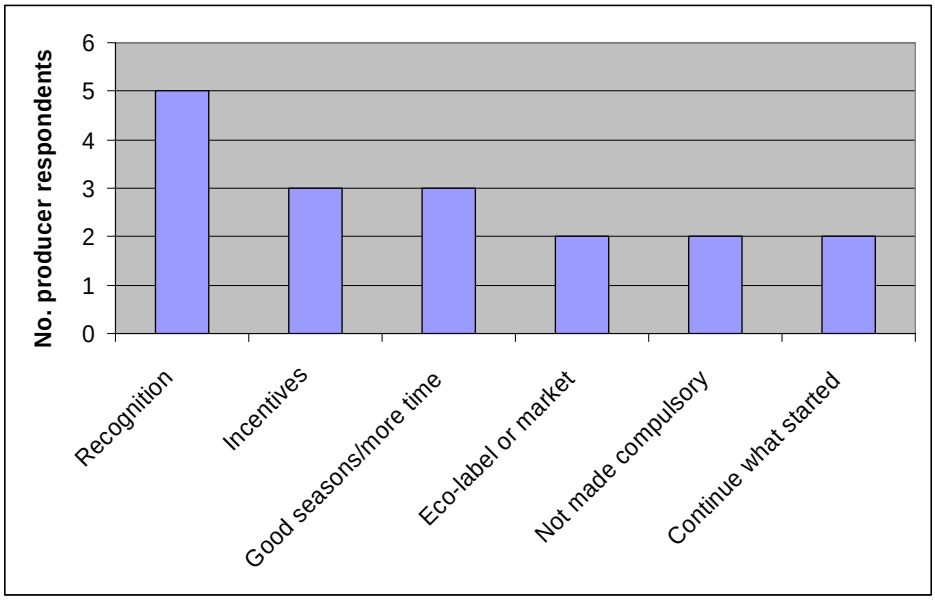


Figure 6.22. Future requirements identified by producers to help them continue with EMS.

Benefits of EMS training and process
Seven producers provided feedback (with some providing more than one comment) on some of the benefits of the EMS training and process (Figure 6.23). Four producers thought that delivery of the EMS training was good and well structured and three suggested that participating in the project had improved their awareness, particularly of environmental issues. Two producers benefited because they now have a documented plan rather than one in their head, and another two mentioned that the EMS process provides benefits, but didn't specify what they were. Single mentions were also made of the benefits of EMS in improving communication, that it was a simple and flexible process, helped to get access to funding and the social aspects of group work within the pilot project.

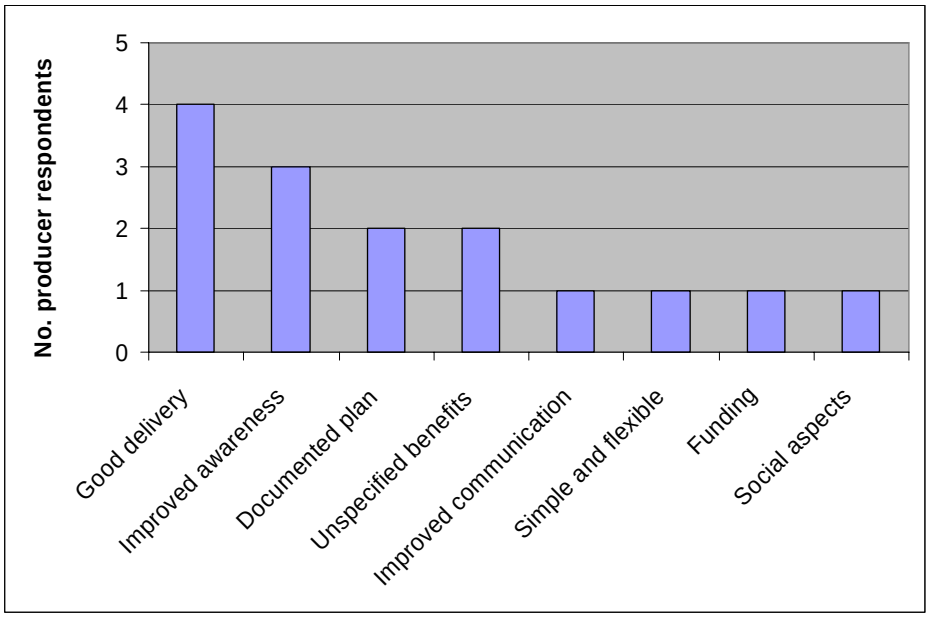


Figure 6.23. Benefits identified by producers about EMS training and process.

Improvements to the EMS training and process
Five producers provided comments in relation to improvements to both EMS training and process. Improvements identified by single producers were that the Pastoral EMS needed an independent audit to give it some credibility, that there is a need for 'one plan to meet all producers requirements', rather than a number of different ones for different things, and EMS needed more promotion to other producers, particularly the benefits of it. Also receiving single mentions were more interaction and discussion with other producers and the need for someone with local knowledge to provide assistance.

Reasons why producers have not found value in EMS
Two producers also provided comments about why they had not found value in EMS. The main reasons cited were that they did not feel that the benefits of EMS outweighed the time taken to complete it, particularly the documentation. They questioned the benefit of all this planning and documenting in such a constantly changing environment, particularly when as soon as they had written something down it became out of date. They also didn't see why they should have to prove to anyone that they were looking after the environment.

General comments from the URS questionnaire
At the conclusion of the URS questionnaire, producers were also given the opportunity to provide any other comments they wished to make. Eighteen of the 31 producers had no further feedback, while 13 provided other comments, with some making more than one.

Five producers commented about the evaluation process in general and they felt that evaluation was necessary, particularly to find out what worked and what didn't. One producer commented that they felt that some of the questions in the survey were not relevant or needed to be rephrased. Other comments were also received about some of the specific URS survey questions, in particular question 6 'What proportion of your on-farm working week is spent managing your enterprise (time in office)?' and question 3 'your priority and target aspects of management'. For question 6, one producer commented that they did not feel that the responses to this question would give an accurate reflection of the amount of planning producers do as they do not necessarily do all their planning when in the office, particularly if they like to plan in their head.

Seven producers commented about URS question 3. The main comments provided were about answering options for question 3 which six producers found were not relevant and did not accurately reflect the answers producers wanted to give. The other producer commented that they only found the first and last sub-questions useful (rating the significance of the issues and what is making it difficult to address these). The other questions, 'how are you managing this issue now?', 'what is your target level of management?', 'how much has EMS influenced this target?' and 'how much you will invest in this issue to reach the target?', were seen as a waste of time.

6.4 Discussion

Producers from 37 properties have trialled the Pastoral EMS, and of this group, producers from 31 properties provided information on a wide range of topics that were the basis of a benefit-cost evaluation of EMS implementation in the pastoral industry. At this early stage of EMS development and implementation by producers, it is important to note that many of the benefits and costs have not had time to materialise. With this in mind, a number of more immediate benefits and costs of EMS development and implementation are discussed, with topics covered including:

- time and costs;
- the benefits of group work;
- the value of EMS for improving adoption of BMP;
- whether it has been influential in affecting management change;
- if EMS has increased the amount of planning producers carry out;
- the value of EMS as a tool for natural resource management;
- if it has any marketing benefits;
- whether EMS is being used to its full potential;
- factors influencing EMS development and implementation; and
- the future of EMS in western Queensland pastoral industries.

6.4.1. Time and costs of EMS implementation

Time
During the 18 months that producers from 31 properties were involved in this pilot project,

Pastoral EMS training and development took, on average, seven days. Implementation of their action plans and monitoring for about two-thirds of producers took a further 16 days. Whilst some producers found it too difficult to quantify, and thought implementation and monitoring were ongoing within their management and others had not yet commenced this.

The majority of this pilot project's producers have only undertaken the initial cycle of their EMS, which was deliberately kept short and simple by the pilot project so that producers first experiences were not bogged down in training, planning and documentation. Also, the recording templates in the *Pastoral EMS Guide* were kept simple and brief, again to limit the amount of time producers spent in the office developing their EMS. Hence producers have not spent a great deal of time developing their paper-based components of EMS, and this is also what Carruthers and Tinning (2003) observed. However, Steward and Banney (2003) reported that as part of the MLA EMS beef pilot project, producers spent considerable time and resources developing their EMS. However, this was probably because they did not receive any training before commencing development, and they aimed for full compliance with the ISO 14001 standard.

At this early stage of Pastoral EMS development and implementation, the time spent by producers has been minimal. Additional investment in time on elements such as planning, monitoring and recording is required before producers can gain significant benefits from their EMS.

Cost

It was anticipated that participation in EMS by producers would be limited if this involved significant costs, as EMS was something that most were not actively seeking and nor was there a demand for EMS in the extensive pastoral industry. However, the CLMA pilot project stated in Anon (2005a) that people work harder when they pay a lot of money for something, such as consultants, and as such, producers may not have valued the free EMS training and other assistance provided by pilot projects.

The main costs of EMS as identified by other sources are auditing (Banney 2002, Steward and Banney 2003) and carrying out environmental works (Roberts 2004). Auditing was not a cost incurred by producers in this pilot project, and most producers had only just commenced implementation, so their on-ground costs were low. Hence, the average out-of-pocket expenses per producer of $514 for EMS involvement were mainly related to training and development costs.

6.4.2 Group work helps to get EMS done

The results of this pilot project support group work as a key motivating factor for EMS training, development and implementation. The benefits of working in groups, such as increased motivation and commitment, keeping to schedule and collective thinking have been reported in a number of studies, and for more details on these benefits see Chapter 4, Section 4.4.3 and Chapter 5, Section 5.4.1

The effectiveness of group work is further supported by that approximately half of the producers who claimed that they would not have undertaken EMS if they had not worked in groups. Similarly, Huhn *et al.* (2005) found that producers believed some form of group work was required for EMS adoption and one-on-one support was only mentioned in the context of follow-up to this group work.

One of the reasons producers were not keen to develop EMS individually was that they felt that the process would have been daunting and they would have lacked commitment without the group support. This is borne out in the difficulties this pilot project experienced with motivating individual producers and organising and keeping meeting dates. Both Cannon (2005) and Grosser and Marshall (2005) also found difficulties with the one-on-one approach to implementing EMS. However, Donovan *et al.* (2004) reports that an e-learning approach, involving the internet, as a way of overcoming problems with bringing everyone together at the same time and place.

6.4.3 Does EMS help BMP adoption?

According to the ISO 14001 standard, EMS should encourage businesses to consider implementation of the best available techniques, where appropriate and economically viable, and fully take into account the cost-effectiveness of such techniques (AS/NZS ISO 14001:2004). In the pastoral industry of western Queensland, best practice information has not been readily accessible to producers but this is now slowly changing. As such, there is still little awareness amongst producers of BMP, particularly in the environmental area. Many producers currently believe that the management practices they employ on their property are the best they know of. Accordingly, for 21 of the 31 producers that participated in the evaluation process, EMS had not increased their uptake of BMP. Again, this is not surprising given the early stage of EMS development and implementation for producers in this pilot project.

The majority of producers declined offers of training where best management practice could have been accessed, citing cost, time and irrelevance of the material as major factors. BMP training courses provided by DPI&F and other training providers are usually one to three days in length, and producers often find it difficult to leave their properties for this length of time, especially in times of drought. Perhaps because of this, Rivers *et al.* (2005) argues that it is essential that funding is allocated to a professional training team that allows them to communicate one-on-one with farmers, and that this approach appears to be ‘best practice’ in terms of transferring BMP information to them. Perhaps this is one reason why producers participating in this pilot project were not interested in these BMP training courses as they already had one-on-one assistance. Even if producers were interested in the training courses, research by Rivers *et al.* (2005) suggests that group workshops may not be the best method to improve adoption of BMP.

6.4.4 EMS - has it caused a change in management?

The responses of producers to questions on management of a range of issues indicated that their current targets for management are no different to what their target levels will be in five years time. This is despite producers reporting that EMS had increased their understanding of sustainable land management and that it motivated them to improve their business management. This lack of performance shift was not anticipated, given that EMS is a continuous improvement system. Huhn *et al.* (2005) suggested that there was a need for strong technical input if producers are to go beyond an improved awareness of environmental issues and actually implement management changes that deliver true environmental improvements. Also, Medhurst (2005) stated that, when at the beginning of the EMS process, as was the case with this pilot project’s producers, most producers chose to make simple and small changes to their production systems, and consequently these small shifts management may not be picked up.

Another reason for the lack of intended changes to management targets may be that producers in western Queensland are generally not reviewed by external parties, as third-party audited schemes such as QA and OH&S are not common in their industry. Since producers do not intend to be externally audited, the options relating to auditable schemes (in URS question 3, Section 6.3.5) were not relevant to these pastoral producers. Given this, it is not surprising that there is little difference between current and future management targets.

Overall, EMS appeared to have little influence on producers' target levels of management for all of their property issues, and instead, they claimed that EMS only reinforced their thinking on these issues. Further, most producers felt they would have addressed their significant issues over the next five years anyhow, regardless of EMS implementation.

EMS had little effect on how producers manage their properties. This is not surprising, considering most producers believed that few benefits were gained from EMS and that they perceived it as a separate and additional activity, rather than integrating EMS with their overall business management. However, this may change over time, as many producers currently understand EMS to be a property planning process, and not just a tool for managing the environment.

6.4.5 Has EMS increased the amount of planning producers do?

Producers do not tend to spend time in an office writing plans, instead, they prefer to do their planning in their heads as they drive around their paddocks, observing and thinking about improvements that could be made (Lawrence *et al.* 1997, Carman *et al.* 1998). This is supported by the finding that 20 of the 31 producers involved in this pilot project spend less than 25 per cent of their time in their office managing their property.

When the numbers of producers with formal written plans at the end of this pilot project was compared with the numbers at its commencement, if was found that there was no change in the number that had business plans, there was a slight increase in the number with QA and OH&S plans, and there was a large increase in the number with environmental management plans. At the start of the pilot projects, Thomson (2004b) reported that across all industries and pilots more producers had a written business plan than an environmental management plan. There are now more Pastoral EMS producers with documented plans for their environmental management than with a written plan for their business, which isn't surprising considering that they have just spent the last 18 months learning about and developing an EMS for their property. Huhn *et al.* (2005) also reported that most producers lacked the skills and knowledge in non-traditional areas such as business and financial planning.

The limited time spent and value placed on formal documented planning by producers is probably a major reason why EMS had little effect on changing their management practices, including those associated with natural resources. Given that a management process such as EMS is foreign to producers, and that natural resource management is of less importance than livestock management, it is not surprising that most producers regard EMS as a low priority tool. Medhurst (2005) also reported that producers implementing EMS may be seeking more than just environmental outcomes, and that these may be a lower priority.

6.4.6 The value of EMS as a tool for NRM

EMS, through its formal systematic processes, should result in increased environmental management effort followed by improved environmental performance. The following discussion considers whether EMS has increased the amount of monitoring producers carry

out, if they now give more consideration to broader catchment or natural resource management plans, and if there have been any other NRM benefits.

Environmental monitoring

Environmental monitoring is not something that producers have traditionally adopted. For them, observing trends out in the paddock and occasionally noting something in their pocket diary is usually sufficient. While producers do notice changes in their local environments, formal monitoring methods are a low priority.

When comparing the amount of monitoring carried out by this pilot project's producers over the duration of the project, there appears to be more people monitoring and recording information now than previously. This is most likely a result of EMS implementation, as monitoring was a requirement of this and producers were encouraged to conduct more formal recorded monitoring. However in the baseline survey producers only chose one monitoring option, while in the end-of-project survey they were allowed to record more than one option, which may also partially explain the changes.

Over the duration of this pilot project, the issues that were monitored by producers have increased and they are also conducting more formal monitoring than before. For example, at the start of the pilot project, just over half of the producers were monitoring their pasture and this has now increased to three-quarters. Also, pasture is now being monitored more formally using GRASS Check (Forge 1994) and photo sites with an increase of about 10 per cent in each, while visual pasture monitoring has decreased by about 13 per cent. Similarly, monitoring of weeds, vegetation, feral animals and erosion has also increased over the life of this pilot project. Roberts *et al.* (2005) also found that EMS helped producers monitor changes to their properties.

Awareness and use of catchment or natural resource management plans

Based on the results of this pilot project, the value of EMS as a management tool to meet catchment outcomes is questionable, although the use of catchment objectives was not a priority of this pilot project. Thomson (2004b) reported that only six of the 15 pilot projects actively used catchment targets to direct farm level performance, and that this tended to occur for sectors that operated in sensitive environments such as fisheries, or in pilot projects in which catchment management groups were actively involved.

At the end of this pilot project, nearly all producers knew that a catchment management plan existed, having increased from just under two-thirds at the start of the project. However, it is difficult to say if this increased awareness was a direct result of participating in this pilot project, as producers also participated in other activities. While awareness had increased, there has been little change in producer understanding of these plans, but once again, this was at least partly because the use of catchment plans was not an objective of this pilot project. Similarly, there has also been little change in the extent to which producers believe the management of their property is important to the outcomes at the catchment level.

Generally, producers are most concerned with environmental issues within the boundaries of their properties. DAFF (2002) reported that many of the environmental impacts voluntarily identified by farmers when developing an EMS will be those that have arisen from the high risk activities that are their direct responsibility. However, management of these issues is still likely to contribute to overall catchment health, even if this is not a deliberate policy of producers. Producers did note though, that in the future, their EMS will enable them to

improve their property's contribution to catchment health, as they acknowledge that they are part of the catchment.

Lavell *et al.* (2005) demonstrated that it is not sufficient to rely on individuals to develop an EMS and expect outcomes appropriate at the catchment scale. A more structured framework that describes expected responses from individual managers in a catchment context is needed for large scale environmental improvements. Tee and Boland (2005) also suggested that alternative mechanisms such as market based or regulatory instruments may be required to achieve broader natural resource management outcomes at the catchment level.

Other NRM benefits of EMS

Over the period of time that producers developed their EMS there was a shift in thinking as to whether EMS could help them maintain access to the natural resources on which their businesses depended. Fewer producers believe this now compared with the beginning of the pilot project, as the majority have found that EMS has not assisted them with this. However, producers believe that having an EMS should help them to maintain access to their natural resources in the future.

Similarly, EMS has not helped producers 'comply with legal and legislative requirements', and it has not 'helped them gain access to government funding and services'. While many producers have been affected by new vegetation and water management legislation, it is far too early to determine if EMS can play a positive role with compliance and/or with access to natural resources.

However, producers felt that in 5 to 10 years time, EMS will assist them to comply with current legal and legislative requirements as well as help them avoid more stringent and prescriptive regulatory standards. They also believed that EMS will allow them to gain access to government funding and services. These future thoughts are most likely driven by the fact that producers believe that governments will continue to place more restrictive requirements on the extensive grazing industries, and they believe that EMS may help them show that they are responsible and sustainable land managers. Rowland (2000) and Tee and Boland (2005) also reported that producers were participating in EMS initiatives and adopting good environmental management in an effort to avoid systems or regulations being imposed upon them by governments.

6.4.7 Producer thoughts on EMS and marketing

In the beginning of this project, a much greater number of producers believed that EMS would improve their access to current and future markets, and make it possible to ask for a price premium. Similarly Medhurst (2005), Tee and Boland (2005) and Williams and O'Sullivan (2005) all reported that producers were adopting EMS in the hope of a marketing advantage.

However, over the last two years, producers have not received marketing benefits from having an EMS. The current markets for pastoral industry products do not require any environmental stamp of approval, including an EMS. However, producers are optimistic that in the future an EMS will assist them meet market requirements and maybe even receive a price premium. Williams and O'Sullivan (2005) also reported that producers hoped that EMS implementation would eventually help them market their products and obtain a premium. Seymour and Ridley (2005) also reported that market recognition and access to markets was a potential benefit of EMS adoption, but suggested that this was likely to be overly optimistic as market premiums

have been realised in only a few niche markets in Australia. Rowland (2000) suggested that producers that can demonstrate their sustainable production with their EMS will have the potential to differentiate their products in the market place, and would be better placed to meet changing market demands and maintain market access.

6.4.8 Is EMS being used and reviewed by producers?

Producers indicated that their Pastoral EMS would be either used now and again, or updated as required. Similarly, Carruthers and Tinning (2003) noted that producers were more likely to continue to operate using plans in their head, and diaries for record keeping, rather than action plans associated with EMS. It has been suggested that under the circumstances where the benefits of EMS and its more complex and time-consuming documented plans are not immediately apparent, producers are likely to revert to short-term planning in their heads (Thomson 2004b, Watson and Galligan 2005). However, while producers in this pilot project found that they lacked time to deal with the paperwork of the Pastoral EMS process, they indicated that they generally liked the process and felt that it had value.

Overall, producers participating in this pilot project did not review their Pastoral EMS unless they were visited by a member of the pilot project team, and at times some of them struggled to recall what was in their EMS. While many producers have said they will 'update their EMS as required', they probably envisage few circumstances that will trigger this.

6.4.9 Factors influencing EMS development and implementation

A number of factors influenced producer progress with their Pastoral EMS development and implementation. Assistance from project staff and the schedule of meetings encouraged progress, while drought and lack of time slowed progress.

Drought has placed an extra strain on producers in western Queensland with some claiming that it has resulted in a loss of enthusiasm to continue with EMS. Thomson (2004b), Medhurst (2005) and Van de Wouw (2005) also reported that in busy and/or stressful periods it is not surprising that producers would lose enthusiasm for EMS, or even stop implementing it. Thomson (2004b) also reported that adoption and enthusiasm for EMS has been strongest within those industries that relied on access to natural resources for which they do not have ownership or exclusive rights, such as seafood, cotton and rice sectors. EMS has not taken off in the remainder of industries, particularly the broad-acre grain, wool and beef sectors, due to the ongoing drought, financial pressures and a lack of market or regulatory drivers, which tended to make EMS a low priority.

In the absence of obvious and significant benefits, projects or other bodies will need to drive EMS adoption and provide assistance with this, otherwise producers will loose motivation and the desire to continue (Roberts 2004, Thomson 2004b, Huhn *et al.* 2005, Roberts *et al.* 2005). In this respect, Rivers *et al.* (2005) reported that EMS implementation has been greatly assisted by producer access to funding for on-ground works.

6.4.10 Future of EMS in the western Queensland pastoral industry

This section describes the future role of EMS in the pastoral industries of western Queensland, and more specifically, whether producers involved in this pilot project will continue to use EMS, the factors that would encourage them to further develop and use their EMS, the type of EMS that is bested suited and whether EMS should be promoted for widespread adoption.

Will producers continue with EMS?
A number of producers said they would continue to use the Pastoral EMS because of the documentation benefits it provides, and to improve the management of their property. In this respect, they have found being involved in this pilot project worthwhile. However, this producer recognition of the documentation benefits is surprising, given that they are often universal in their desire to minimise paperwork (Carruthers and Tinning 2003). In contrast, Roberts *et al.* (2005) reported that there was increasing recognition that documentation itself was a benefit, even though it was often listed initially as a barrier to EMS implementation.

However, this claimed intention by producers to continue with EMS is questionable, given their very low level of EMS activity. These producers seem to think that because they have written plans their EMS is complete, and do not recognise that EMS is an on-going process. In particular, a number of producers have written plans but have failed to carry them, but still consider that they have and are using an EMS. Similarly Rivers *et al.* (2005) found that of those that developed plans, less than one-third were actively implementing them.

What would encourage producers to continue with EMS?
Not surprisingly, the main factor identified by producers that would encourage them to continue with EMS was some form of financial gain, such as that which may arise through market benefit. Unless there are financial incentives it is unlikely that many producers will go to the trouble of developing and documenting an EMS. However, Seymour and Ridley (2005) reported that governments, processors and agribusinesses would be required to establish systems of recognition or reward for producers who have an EMS, as these do not currently exist. Similarly, Pahl and Yeoman (2005) noted that widespread adoption of EMS across agricultural sectors would require the development and application of effective economic drivers.
The second most important factor encouraging on-going use of EMS was assistance with development and implementation. The importance of ongoing support for producers implementing EMS has also been mentioned by Thomson (2004b) and Huhn *et al.* (2005), and by producers themselves (Roberts 2004, Roberts *et al.* 2005).

With some form of help to develop and implement their Pastoral EMS, producers would probably be more likely to continue with this, particularly those individual producers who did not have the benefit of group discussions and support. Also, contact from members of the pilot project team acted as a reminder for them to take action before the deadline of the next visit date. It is thought that without set meetings and support the majority of producers would not continue developing, implementing and reviewing their EMS.

What form of EMS is best?
Producers have seen benefit in the simplified version of the Pastoral EMS that this pilot project used, and have recommended that this approach continues to be used to help producers quickly and easily commence EMS implementation. However, they do not have the benefit of experience with other forms of EMS, such as a more complete ISO 14001 EMS. Other studies (see Chapter 2, Section 2.6) have also recommended a simplified initial approach to EMS, believing that it would be difficult for most producers to start with ISO 14001, and that this may not be practical for family farms.

Thomson (2004b) reported that only five of the 15 DAFF National Pilot Projects implemented ISO 14001, and these pilots were in industries that had a greater need to publicly demonstrate their environmental credentials. It was noted that in the broad-acre pastoral industries there

was currently less public pressure and fewer other drivers for the adoption of a compliant ISO 14001 EMS (see Chapter 2, Section 2.6 for more information).

The Pastoral EMS was also deliberately left flexible and open to allow producers to achieve a variety of goals. However, some producers have indicated they would have liked more guidance on what they should put in their EMS, especially in terms of BMP for environmental management. The use of an environmental self assessment in conjunction with EMS, as reported by Ridley *et al.* (2003), may have fulfilled this request by giving producers benchmarks to work towards (see Chapter 5, Section 5.4.2).

Promotion of EMS for widespread adoption
Given the lack of tangible benefits of EMS experienced by most producers so far, it was surprising that over two-thirds of them would promote the Pastoral EMS to other producers in their area, and in fact some already had done this. Producers currently implementing EMS seem to believe that a range of benefits, such as improved pastoral industry image, are more likely if many more producers in the industry implement EMS.

Also surprising is the fact that producers thought that the government should manage this process, as a large number of producers are concerned about the amount of control that governments have over their property management. However, neither individual producers nor industry organisations have the resources needed for this promotion, and hence people look towards governments under these circumstances. While Rowland (2000) suggested that industry groups should be called upon to move the EMS process forward, she also suggested that government partnerships were needed.

6.5 Conclusions

The use of a simplified and customised version of EMS, the Pastoral EMS, provided a relatively basic EMS entry point for producers, and made it easier for them to develop and implement this on their properties. As a result of this, producers experienced a number of benefits and costs associated with EMS, and identified conditions necessary for on-going use.

6.5.1 Benefits of Pastoral EMS implementation

The main benefit identified by producers from Pastoral EMS implementation was the documentation associated with EMS, particularly so they could demonstrate to others they were looking after the environment. As such, more producers now have an environmental plan. Also, due to the simplified nature of the Pastoral EMS, it took little time for producers to develop it and because this was a pilot project there were few costs associated except for travel to meetings. Increased monitoring is being conducted and this information is being recorded which may be partially attributed to EMS development.

Producers are also quite optimistic about the future of EMS and many believed there would be more benefits from its use in the future, including access to natural resources, marketing, meeting legal requirements, access to funding and services and reduced costs of environmental management.

6.5.2 Factors limiting Pastoral EMS implementation

A number of costs and factors limiting Pastoral EMS implementation were also identified by producers. To begin with, producers in western Queensland spend most of their time carrying out on-ground activities and find it difficult to devote time to the documentation of their management operations. The fact that more producers now have environmental management

plans than business plans suggests that producers steer away from structured, process based planning unless they are prompted to do so.

For many producers in western Queensland, the on-going drought created conditions that were unfavourable for the introduction of EMS. Producers were focused on the survival of their livestock and their business, and thus had limited time and inclination to work on EMS.

The majority of producers involved in this pilot project are not actively developing or implementing their EMS, except for the times spent with pilot project staff. However, these producers still regard themselves as having and using EMS, even though most have little intention to review it or build on it. This is mainly due to a lack of external recognition and/or reward for EMS implementation.

6.5.3 The future of Pastoral EMS implementation

Even though many producers have indicated that they will continue with EMS after the conclusion of this pilot project, it is doubtful that this will occur. Most producers were not actively working on their EMS towards the end of this pilot project, and when they did, this was done with prompting and assistance from pilot project staff.

Also, producers identified a financial incentive or market benefit as the main reasons why they would continue with EMS, and neither of these are likely in the short- to medium-term. In contrast, the costs, including time and money, needed to plan, document and implement their EMS, are tangible and immediate. This combined with a strong dislike for planning and documenting any aspect of their business are the main reasons why producer EMS activity is faltering and likely to cease altogether.

Producers in western Queensland place little value on planning, documentation, monitoring and recording, which are the main benefits that are available from EMS development and implementation. Consequently, these internal drivers are weak, and are not capable of inducing producers to adopt and continue implementing EMS.

On-going development and implementation of EMS by producers in western Queensland is largely reliant on external drivers. However, obvious external drivers, such as producers being required and/or rewarded for having an EMS by markets, governments, financiers, and regional NRM bodies, do not exist. Therefore, current circumstances do not favour the uptake and on-going use of EMS in the pastoral industry.

To a limited extent, and for a short period of time, this can be alleviated by government agency and industry organisation promotion of EMS and the provision of free training and development assistance to producers. However, only a small proportion of producers, probably less than 10 per cent, are likely to take up EMS as a result of this activity, and in the absence of external rewards, it is likely that they would cease implementation soon after the training was completed.

While other management systems, such as farm management systems (FMS) (see QFF 2005a and b) and property management systems (PMS) are being developed and offered to producers, it is likely that they will also struggle to gain acceptance on the basis on internal business benefits. These have little value to pastoral producers, and they are very reluctant to spend time and other resources planning and documenting their business. As with EMS, widespread and on-going use of FMS or PMS by producers will require external rewards.

7. Environmental labelling and branding of meat

7.1 Introduction

A component of this pilot project was the use of EMS as a foundation for the credible marketing of 'environment-friendly' premium meat and wool products. However, there is no guarantee that a livestock producer with an EMS, even a certified ISO 14001 EMS, is less environmentally damaging than other producers. As a consequence, the EMS logo cannot be used as an environmental label for a product, and EMS alone cannot differentiate meat in the market place on environmental grounds.

In comparison, environmental labelling programs, such as ISO 14024, contain a range of environmental performance criteria which constitute environmental best practice within a particular product category. Environmental labels, particularly eco-labels, are trademarks that are awarded to products or services considered to be less harmful to the environment than other products and services within the same product category (MacNamara and Pahl 2004). The overall objective of environmental labels is to provide consumers with verifiable, clear and non-deceptive information to encourage them to purchase products that are less damaging to the environment.

It is possible for producers to combine their EMS with an environmental labelling program, and use the labelling programs environmental performance criteria and certification process to verify and publicise their good environmental management. This has the potential to encourage, recognise and reward producers that implement good environmental management practices.

A national survey of 300 producers located in the rangelands (Pahl 2003) found that 12 per cent of them wished to implement environmental certification, and a further 73 per cent said that they were interested in this and wanted to find out more about it. For these respondents, the most powerful driver of adoption was substantial consumer demand for products labelled or branded under these programs – 82 per cent of producers would consider implementing a program on this basis.

At the same time, a national survey of the main grocery buyer from 605 households found that Australian consumers had a strong interest in meat that was produced with concern for the environment (MacNamara and Pahl 2004). Eighty-two per cent of respondents said they were very likely to buy meat that had an 'environment-friendly' guarantee, and 60 per cent said they would purchase the meat even if it was priced 10 per cent higher.

These figures on the intentions of supply by producers and demand by consumers suggest that there is potential for trade in 'environment-friendly' meat within Australia, and on this basis it is surprising that meat bearing environmental labels is not more readily available at the retail level.

It was for these reasons that DPI&F, several commercial companies, and a number of producers decided to conduct two environmental labelling meat marketing trials in Brisbane. The commercial companies and their associated supply chains (processors, wholesalers, retailers) that participated in these consumer trials were Pat's Organics from Roma and a Damara lamb producer group from Mitchell and Bollon. The Pat's Organics supply chain used the Certified Koala Friendly label on their fresh beef, and the Damara lamb producer

group used the Green Tick Natural label on fresh lamb. These two environmental labelling programs were either based on EMS or had a requirement for EMS.

This chapter briefly describes these two environmental labelling programs and the methods, results and the main findings of their associated consumer marketing trials. For more detail on the two trials, refer to the marketing report by Footprints Market Research (Luxton 2005). Footprints Market Research was the consultant company engaged by this pilot project to undertake the consumer marketing trials.

7.2 Certified Koala Friendly labelling program

The Australian Koala Foundation (AKF) is an independent, non-profit, non-government organisation whose prime focus and aim is the long-term conservation and effective management of the wild koala in Australia (http://www.savethekoala.com). The AKF and DPI&F developed a Koala Friendly certification and labelling program for the pastoral industries, based on the Pastoral EMS. A producer that complies with the performance criteria of this labelling program, covering koala conservation and a wide range of sustainability issues, can then be awarded the Koala Friendly label for use on products originating from their property.

7.2.1 Certified Koala Friendly label performance criteria

A main aim of the Koala Friendly certification program was to develop a standard that enables properties applying for this label to all be assessed against the same criteria, and by the same processes. This standard provides a clear description of the performance requirements of properties, setting out what a property must achieve to be regarded as sustainable and 'koala-friendly'.

Performance criteria should ideally be based on measurable on-ground outcomes associated with the environment and koalas. However, it is often impossible to define measurable on-ground targets that are relevant to and equally applicable to all properties. For this reason, performance criteria that are adopted by environmental labelling programs for food are usually based on planning and management processes and/or industry best management practice (BMP). The performance criteria used in the Koala Friendly certification program are outlined below. This begins with a process (EMS), into which a number of industry BMPs and measurable performance criteria have been imbedded.

1. A prescribed process;
   An example of a prescribed process is the management systems provided by the ISO 14001 standard for EMS. However, it does not specify the issues and targets that must be addressed. Likewise, it does not specify practices that a business should use to achieve their targets.

2. Industry best management practices (BMP);
   BMPs are the practices recommended by industry that are most likely to achieve good environmental outcomes. For example, a good outcome such as reduced chemical spills into the environment can be achieved using BMP by building a chemical storage shed that is surrounded and contained by an impermeable wall.

   While a BMP such as this does not specify a target for the incidence of chemical spills, it does specify a practice that is likely to significantly reduce these.

3. Environmental targets - quantitative measures;
   In this instance, quantitative environmental targets or outcomes would be prescribed as performance criteria. For example, koala corridors along designated water courses must be at least 200m in width.

7.2.2 Koala Friendly certification program

While the Certified Koala Friendly label is based on the Pastoral EMS, its individual elements vary from the equivalent elements of the Pastoral EMS (described in Chapter 2). Major differences are the inclusion of a koala inventory procedure, koala conservation and environmental performance criteria, and an external audit process.

The Certified Koala Friendly labelling program for the pastoral industry is now available for use by cattle and sheep producers. The full version of this program is available on the web site of the Australian Koala Foundation (AKF) (http://www.savethekoala.com/ecolabel.html). The main components of this are briefly outlined below.

Step 1: Self-assessment

The producer's first step towards achieving Koala Friendly certification is to complete a self-assessment against the koala-friendly and sustainability performance criteria. The self-assessment has two levels. The first level is mandatory in the sense that all criteria must be met before a property can apply for the label. The second level is broken up into two subjects; (1) Koala conservation and management, and (2) Overall sustainability.

Step 2: Application and discussion

The producer submits and then discusses the self-assessment with an AKF employee. Action plans needed for the property to meet the requirements of the Certified Koala Friendly label are then identified and developed jointly with the producer and AKF. Options for marketing the product are also discussed at that stage.

Step 3: Koala habitat mapping

Mapping is an integral part of the certification process and involves AKF identifying priority koala habitat management areas on the property, using an aerial photograph or map. Protection of these areas is the most important component of the certification program.

Step 4: Koala management system and audit

Providing the pastoral producer has decided to continue working towards attaining Koala Friendly certification, the next step is to develop a Koala Management System. This management system involves steps A to G as described below:

A. Writing a policy
This policy describes the commitment of the business to environmental sustainability generally, and koala conservation specifically.

B. Identifying and prioritising objectives and targets
The AKF's analysis of the property's performance against each of the performance criteria listed in the self-assessment (Step 1) will have identified areas where improvement is required before the property can become Certified Koala Friendly. The pastoral producer, in conjunction with AKF, then defines specific objectives and targets for the performance criteria which need improvement before certification can be achieved.

C. Developing action plans

This step involves the identification and planning of actions required to achieve the objectives and targets defined in B above, which may require external advice.

D. Implementing Actions
Implement actions as set out in the action plans of C above.

E. Monitor and Check
Check to determine whether the action plans are being implemented as planned, in relation to timing, location, extent and methods. Undertake monitoring to determine if the actions are having the desired affect.

F. Review and Improve
Review the entire Koala Management System and outcomes achieved. Make adjustments where efficiencies and effectiveness can be improved.

G. Audit
The AKF will formally assess the overall performance of the property against the performance criteria. If the property achieves an average score of 50 per cent or more for both koala conservation and management and the overall sustainability criteria, then they will be awarded the Certified Koala Friendly label.

Step 5: Certification
Providing the audit in step 4 produces a positive outcome, the AKF will certify the property. Following this, the AKF will:

- issue the farm with a certification number for a period of three years subject to successful audit every 18 months;
- supply two Certified Koala Friendly farm gate signs; and
- supply Certified Koala Friendly product labels (as per the logo below) for placement on certified products.

Step 6: Review and development
Every 18 months, an AKF auditor visits the farm to review progress made on identified action plans. The auditor then decides whether enough progress has been made in order to continue the Koala Friendly certification.

7.3 Koala Friendly beef marketing trial

Pat's Organics is a livestock production business near Roma in southern Queensland. This company produces certified organic fresh beef, lamb and goat meat and sausages. Pat's Organics livestock are processed at a local abattoir in Roma and the carcasses are then distributed by a wholesaler to a number of retail outlets in south east Queensland. The majority of Pat's Organics products are sold through retailers such as butchers and health food shops.

Pat's Organics livestock property at Roma was awarded the Certified Koala Friendly label by the AKF in July 2005. The Certified Koala Friendly label was then used on fresh and frozen beef products sold during the marketing trials.

This pilot project, with the assistance of Footprints Market Research, conducted this marketing trial during which time several cuts of beef were made available at three retail outlets in Brisbane.

The overall objective of this marketing trial was to determine the market potential for Certified Koala Friendly beef products.

A brief account of the trial methodology and main findings is provided below. However, a more detailed description can be found in Luxton (2005).

7.3.1 Methodology of the Koala Friendly beef marketing trial

Arrangements were made for beef produced on Pat's Organic livestock property near Roma to be processed and delivered to three retail outlets in Brisbane. The three retail outlets were Allsop and England, Diamond Meats and Simon's Gourmet Gallery.

The Certified Koala Friendly marketing trial was conducted during August and September 2005. Certified Koala Friendly beef was promoted to consumers at each retail outlet through posters, brochures, name tags in display cases, and stickers used on meat trays.

During the marketing trial, a total of 275 consumers at the three stores were interviewed using a questionnaire. The customers interviewed were those that had noticed the Certified Koala Friendly beef promotion, and had either purchased beef while in the store or were regular beef customers at that store.

The customers of the three retail outlets were significantly different to the over-all Brisbane population described by ABS (2001), in that they consisted of a higher proportion of females, and they tended to be older people with higher incomes and fewer children. While they were much more similar in profile to the random national sample of 605 shoppers described in MacNamara and Pahl (2004), these shoppers were characterised by more males, more older consumers and more consumers of organic meat.

7.3.2 Results of the Koala Friendly beef trial

The main results of this trial are presented under the headings of consumer responses and supply chain responses.

Consumer responses

Around 80 per cent of the 275 respondents were either 'somewhat' or 'extremely interested' in the Certified Koala Friendly beef. However, only 126 (46 per cent) of the 275 people interviewed actually purchased Certified Koala Friendly beef during the trial. Of these purchases, most occurred at Allsop and England, where 73 per cent of customers interviewed purchased the product that day. In comparison, 56 per cent of customers at Simon's Gourmet Gallery and only 12 per cent at Diamond Meats purchased Koala Friendly beef.

While there were no customer complaints about eating quality of the beef during the trial, a small number of consumers at Allsop and England were of the impression that the meat labelled as Koala Friendly was actually koala meat, and were upset by this.

Consumer awareness and understanding of the concepts promoted by the Koala Friendly label were high, with 64 per cent realising that the meat had been produced without harming koalas, and 61 percent realising that the meat had been produced without harming the environment.

The two main reasons why customers purchased Certified Koala Friendly beef during the trial were because it was organic and did not harm koalas. When asked about their reasons for purchasing this in the future, the most frequently mentioned issues were no chemical additives

including growth hormones, taste/flavour, protection of koalas, environmental protection and grass fed (not from a feedlot). While protection of koalas and the environment were of considerable interest to customers, these had less influence on their purchasing decisions for beef than did chemical free and tastes good.

Certification of the beef by an environmental group such as the Australian Koala Foundation was highly regarded by consumers. Sixty-four per cent said they would trust certification by an environmental group, compared with 43 per cent by government and 30 per cent by an independent company.

When the concept of Certified Koala Friendly beef was explained to consumers, 91 per cent said that they were either 'extremely' or 'somewhat interested' in buying this beef in the future. Consumers that were more likely to purchase Certified Koala Friendly beef were females, buyers of organic meats, and those who were concerned about the environmental impacts of grazing. Similarly, consumers that will pay 10-40 per cent price premiums were females, those that purchased Certified Koala Friendly beef during the trial, those that consume some organic meat, and those that always think about the environmental impacts of grazing when buying meat. Based on the likelihood of purchasing Certified Koala Friendly beef expressed by customers of the three stores, it was estimated that 16-34 per cent of them would pay a 10 per cent premium, 9-19 per cent would pay a 25 per cent premium, and 5-10 per cent would pay a 40 per cent premium.

Demand estimates varied between consumers that purchase organic meat and those that do not. At a 10 per cent price premium, demand by consumers of organic meat was estimated to be 19 to 39 per cent, compared with 11 to 24 per cent for consumers that do not purchase organic meat.

When customers were asked to suggest changes to either the product or associated information that would make them more likely to purchase Certified Koala Friendly beef, the most common responses by far were more advertising in the media, more product information, and more marketing and merchandising materials.

Supply chain responses

Overall, while two of the three participating retail outlets were happy to continue selling Certified Koala Friendly beef, they did not see that this would increase their sales of beef. To begin with, they were some what sceptical that koalas would benefit from the Certified Koala Friendly labelling program, and they believed that Certified Koala Friendly beef offered no real benefit to consumers. The retail outlet that was not prepared to continue selling this product believed that the wholesale price was too high, or that it did not offer value for money.

7.3.3 Implications of the Koala Friendly beef marketing trial

Consumers are receptive to environment-friendly meat purchases, but need further information to encourage them to actively seek this product. For Certified Koala Friendly beef to be widely accepted by consumers, there needs to be a consumer awareness campaign emphasising the need to protect koala habitat and explaining how the Koala Friendly certification program will do this. Given the credibility of the AKF with consumers, this information could best be provided by them.

Supply chain
The meat should initially be marketed through outlets specialising in organic or free-range produce. These businesses have a vested interest in promoting 'green' products and supporting environmental initiatives, and attract consumers who are interested in the origins of their foods. The Koala Friendly label may be of value to organic or free range/natural retail outlets that wish to create a point of difference with their competitors in these markets. Apart from this, Koala Friendly labelling may not add value to certified organic meat products.

It will be essential to move into non-organic markets if future expansion is desirable. High quality, specialty butcher stores such as Superior Meats or Simon's Gourmet Gallery would provide a suitable starting point for entering the non-organic market. It is at these types of stores that the Koala Friendly label is likely to add value to existing undifferentiated products.

Consumer segments
The research has found that consumers most strongly interested in Koala Friendly beef were more likely to be females, those who were environmentally aware, organic meat buyers and others interested in the production practices that influence meat safety and quality. Targeting these consumers through speciality retail outlets, women's magazines, and environmental publications and programs is recommended, as well as the ongoing involvement of the AKF in providing information to their members and supporters.

Claims and messages
The koala is a readily recognised symbol and there is strong emotive support for protection and preservation of this animal and its habitat. Furthermore, the claims associated with Koala Friendly beef are succinct and easy to convey to consumers. This combination of a highly recognisable and emotive symbol with a simple product claim provides the ingredients for a successful marketing strategy. For these reasons at least two-thirds of people that noticed the in-store promotion recalled that producing meat without harm to koalas or the environment were the main claims associated with the Koala Friendly label. However, specific examples of how koala conservation is achieved on the farm would assist consumers in visualising and relating to these benefits.

Allsop and England actively promoted the Koala Friendly beef to their customers, and all beef sold in their store was labelled Koala Friendly. Verbal explanations were given to customers, and the display cases contained a large number of meat tags. Consequently, a very high proportion of customers of this store noticed and understood the promotion, and this was evident in the high level of product purchases. In comparison, the Koala Friendly beef at Diamond Meats was mostly confined to a small freezer at the back of the store where organic meats were kept. While posters and brochures were also present in this store, the Koala Friendly beef was not actively promoted to their customers, and only a very small proportion of the customers interviewed actually purchased this product.

The AKF is well known and credible, but further general community awareness of AKF and its Koala Friendly certification system could generate further demand for certified produce.

Pricing strategies
While Pat's Organics remains the sole supplier, Koala Friendly Beef is being sold at organic meat prices, with at least a 20 per cent premium over regular beef. Despite this existing premium, shoppers at Allsop and England displayed the greatest willingness to pay an additional premium for beef that is Koala Friendly.

As other suppliers join the scheme, non-organic Koala Friendly meat will become available. This could be sold in outlets not specialising in organic meats, but which focus on quality and safety, such as Superior Meats. It could be sold at an initial premium of 10-15 percent above regular beef, and therefore be less expensive than organic beef.

7.4 Green Tick environmental labelling program

Green Tick Certification Limited is a private organisation from New Zealand that is providing third-party sustainability certification (see http://www.greentick.com). The main label of the Green Tick organisation is Green Tick Sustainable. This is the foundation program for four other Green Tick brands or labels (see http://www.greentick.com/Html/standardsF.html), including Green Tick Natural, Green Tick Organic, Green Tick GE-Free, and Green Tick Fair Trader. To be awarded these labels a business must first comply with the requirements of Green Tick Sustainable.

Green Tick collaborated with this pilot project for the purpose of adapting their Green Tick Sustainable certification program to the pastoral industries. In this respect, Green Tick developed an Application Kit for the Damara lamb producers that participated in the marketing trial. The key documents of the Green Tick Application Kit were the Health and Safety Manual for a pastoral property and the Farmer's Check-sheets.

The Health and Safety Manual covered a wide range of health and safety issues associated with pastoral properties. Pastoral producers identified the issues that were relevant to their properties and then developed operational procedures and/or action plans to deal with these.

The Farmer's Check-sheets contained guidelines on practices and associated records that demonstrated sustainability. The main topics addressed were farm safety, product quality, natural resource use, management of farm chemicals, energy use, contaminant and waste management and environmental management systems.

To gain certification, producers were required to be audited and have records that show that their property management practices had complied with the Green Tick™ Standards for safety and sustainability during the past 12 months.

The Green Tick label used in this Damara lamb marketing trial was Green Tick Natural.

In addition to all of the criteria of the Green Tick Sustainable label, the Green Tick Natural label also required an accredited laboratory to conduct a chemical residue test showing that no pesticides or other farm chemicals had been detected in the product.

The Damara lamb producers used this Green Tick label in conjunction with their own producer group brand.

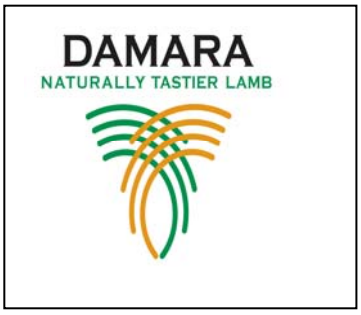
7.5 Damara lamb producer group brand

The EMS pilot project, in conjunction with the Damara lamb producer group, developed a Damara logo or brand for use during the consumer marketing trial. This producer group, consisting of three families from the Mitchell and Bollon areas of south west Queensland who were also implementing the Pastoral EMS, produced Damara lambs. Damaras are a breed of

South African meat-sheep that are becoming popular with meat-sheep producers in western Queensland.

The main claims made in respect to this product were the sustainable production conditions, sheep raised under free range conditions rather than in a feedlot, natural production and free of synthetic chemicals or residues. However, most of these features were not included in the Damara brand, and instead were presented in a brochure and poster used during the marketing trial (see Luxton 2005 for copies of these).

The marketing brand of this Damara lamb producer group is shown opposite. It was designed by Inovoke, a graphic design company in Brisbane.



This brand was used on lamb in conjunction with the Green Tick Natural label during the marketing trial.

7.6 Green Tick Natural Damara lamb marketing trial

The Damara lamb producer group, a retail butcher shop called Centro Country Meats and a wholesale company called JBD Cold Stores, developed an alliance for the purpose of marketing fresh Damara lamb into the south east Queensland market. However, Centro Country Meats was sold immediately prior to the marketing trial and was therefore unable to participate in the trial. While JBD Cold Stores continued to play the role of wholesaler for the trial, the retail outlets they supplied with lamb were not willing to participate in the marketing trial. Consequently, the three Brisbane retail outlets required for the trial had to be recruited from outside of this supply chain. These outlets were Meat Your Lifestyle in West End, Premium Meats in Holland Park, and the Butchers Block in Fortitude Valley.

The objective of this trial was identical to that of the Koala Friendly beef trial described above, being to determine the market potential for Green Tick Natural certified Damara lamb products.

A brief account of the trial methodology and main findings are provided below. However, a more detailed description can be found in Luxton (2005).

7.6.1 Methodology of the Green Tick Natural Damara lamb trial

The Green Tick Natural Damara lamb marketing trial was conducted in Brisbane at the same time as the Certified Koala Friendly beef trial, being August to September 2005. As with the Koala Friendly beef trial, Footprints Market Research was also responsible for planning and operating this trial.

Three Damara lamb producers near Mitchell and Bollon that implemented the Pastoral EMS prepared for and achieved Green Tick Natural certification in July 2005. The processes involved in acquiring this certification were described in the *On-farm EMS and environmental labelling in the pastoral industries* mid-term report (2005). These three properties supplied the lambs for the Green Tick Natural consumer marketing trial in Brisbane. This lamb was further differentiated by the Damara lamb brand of this producer group.

The marketing trial used prime F2-cross Damara lambs with a dressed weight of between 18 and 22 kg and a fat score of 2 to 3. At the property level, attempts were made to implement

practices that would increase the eating quality of the lambs, such as providing them with quality pasture, and making sure they were well fed and watered prior to being transported to the abattoir. However, pasture quality and quantity was not consistently high due to dry seasonal conditions during the early stage of lamb development.

Lambs from the producer properties were transported by a small stock truck to an abattoir at Miles in south west Queensland. Due to logistical issues at the abattoir and the different supply time requirements of participating retailers in Brisbane, only some lambs were processed on the following day. The remaining lambs were processed three days later.

As with the Koala Friendly marketing trial, Green Tick Natural lamb was promoted at each retail outlet using posters, brochures, name tags in display cases, and stickers on meat trays.

During the marketing trial a total of 262 consumers at the three stores were interviewed using a questionnaire. The customers interviewed were those that had noticed the Green Tick Natural promotion, and had either purchased lamb while in the store or were regular lamb customers at that store.

The customers of these three retail outlets were also significantly different to the over-all Brisbane population in that they consisted of a higher proportion of females, and they tended to be older people with higher incomes and fewer children.

7.6.2 Results of the Green Tick Natural Damara lamb trial

The main results of this marketing trial are presented under the heading of consumer responses and supply chain responses.

Consumer responses

Around 74 per cent of respondents were either ‘somewhat’ or ‘extremely interested’ in the Green Tick Natural Damara lamb. However, they appeared to be confused about the qualities of the lamb as represented by the environmental label and producer group brand, with no one issue dominant. Better tasting lamb, healthier lamb, chemical-free and organic were the most common messages that consumers received about the Green Tick Natural Damara lamb. Only 13 per cent of respondents mentioned that this lamb was produced without harming the environment.

Similarly, the main reasons for purchasing Green Tick Natural Damara lamb during the trial were of a practical nature, with availability, lack of synthetic chemicals and freshness being more important than the environmental claims and the Green Tick Natural label. Overall, purchases of this product were low, as only 13 per cent of customers interviewed purchased the Green Tick Natural Damara lamb, even though they had noticed this product on the day. On a store by store basis, these proportions were 20 per cent at Superior Meats, where the butcher actively encouraged trial, compared with 10 per cent at the Butcher’s Block, and just 8 per cent at Meat Your Lifestyle.

Participating retailers reported at least three consumer complaints about this product, with toughness being the main issue of concern. One further customer reported that the lamb was less tastier than other lamb they had eaten.

When asked about their reasons for purchasing this lamb in the future, the most frequently mentioned issues were no chemical additives, taste/flavour, humane production methods,

healthy, natural and low in fat. Only 17 per cent of respondents mentioned environmental protection as an appealing factor. When asked which single factor was most important in their decision to purchase lamb, the most common response by far was tastes good. No harm to the environment was the sixth most important single factor, with value for money, chemical-free, hormone-free and humane production all rated ahead of this.

In relation to certification, respondents placed more importance on this being managed by an environmental group, followed by government and then an independent company. Consumers were not familiar with the Green Tick organisation, and consequently their confidence in them was limited by this lack of knowledge.

When the concept of Green Tick Natural Damara lamb was explained to customers, 95 per cent said that they were either 'extremely' or 'somewhat interested' in buying this lamb in the future. Consumers that were more likely to purchase Green Tick Natural Damara lamb were females, buyers of organic meats, and those who were concerned about the environmental effects of grazing. Again, age and income levels did not appear to be correlated with levels of interest.

Based on the likelihood of purchasing Green Tick Natural Damara lamb expressed by customers at the three stores, it is estimated that 15-31 per cent of them would pay a 10 per cent premium, 7-16 per cent would pay a 25 per cent premium, and 4-9 per cent would pay a 40 per cent premium.

Consumers of certified organic meats are predicted to have higher levels of demand for this product compared with consumers that do not purchase organic meat. At a 10 per cent premium, the forecast demand for Green Tick Natural Damara lamb from organic meat consumers is around 17 to 35 per cent, compared with 12 to 25 per cent for non-organic meat consumers.

When respondents were asked to suggest changes to either the product or associated information that would make them more likely to purchase Green Tick Natural Damara lamb, the most common responses by far were more advertising in the media, more product information, and more marketing and merchandising materials.

Supply chain responses

A number of problems arose during the operation of this supply chain, including:

- Difficulties in supplying 250 saleable lambs each week, being the cost-efficient number of lambs needed for transport purposes;
- A reluctance of the Damara lambs to unload from the truck at the abattoir, causing time delays and increasing the stress levels of lambs prior to slaughter resulting in diminished meat quality;
- The processor's inability to process all stock on the day after arrival, due to plant breakdown and insufficient capacity; and
- Coordination difficulties between the wholesaler and the retailers, arising in disruptions to normal delivery schedules for butchers.

At the completion of the trial, the participating wholesaler and retailers were not prepared to sell Green Tick Natural Damara lamb in the future. Significant improvement in the eating quality and the consistency of the product are necessary before the product can again be marketed. Also, at least one of the participating retailers was concerned about the narrowness

of the Damara lamb carcasses and the darkness of their meat compared with the lambs they sourced from Victoria. Damara lambs also have longer legs and less muscle mass than traditional meat-sheep varieties.

Apart from this, supply chain understanding of the trial labels and products was good, and two of the three participating retailers and the wholesaler were interested in selling lamb products carrying some form of environmental label in the future.

7.6.3 Implications of the Green Tick Natural Damara Lamb marketing trial

Consumer interest in Green Tick Natural Damara lamb seemed to be very high, with three quarters of lamb buyers interested in the promotion, and 95 per cent interested in buying it for their household in the future. However, given the low sales of this product during the trial, it is unlikely that this potential can be realised.

Supply chain

This marketing trial has demonstrated the problems that can arise when supply chains are not fully coordinated, committed, and/or experienced with handling a specialised product. The point or points within the supply chain that are the cause of problems with inconsistent product quality need to be identified before attempting further market trials with Green Tick Natural Damara lamb. Tests need to be conducted to determine where these problems originated, drawing on the recommendations of Meat and Livestock Australia for maximising lamb and sheep-meat eating quality (MLA 2003a, 2003b). Production level, transport and processing practices all need to be reviewed to find solutions to the quality problems experienced during the trial. This is needed to convince future wholesalers and retailers that quality problems have been overcome.

The most likely causes of tough meat are periods of poor nutrition during the growth of lambs, and high stress levels of lambs immediately prior to slaughter at the abattoir. The lamb producers may need to handle lambs more frequently on their properties to prepare them for handling at the abattoir, provide supplements during periods of poor pasture quality, and/or to finish off lambs in a feedlot.

The abattoir also needs to understand the unique nature of Damara lambs, have suitable handling facilities, and learn appropriate stock handling and meat management processes to minimise stress to this animal, and thus maximise meat quality. Abattoirs can also implement practices that improve the tenderness of meat, such as tender stretching and electric stimulation.

The wholesaler plays a less important role in determining the tenderness of meat. It is more important for them to be able to access the required target segment of consumers, and therefore have retail clients in high income areas of Brisbane, who have a focus on safe and high quality produce. As with Koala Friendly beef, it may be preferable to target butcher-style shops, where the personal service enables the labelling program to be promoted and explained to consumers.

The ideal butcher shop outlet for this type of trial would be one where the customer base is environmentally aware (females, organic meat consumers, possibly a higher educational level), and which emphasised the origins of the produce on sale.

Pricing strategies
As for Koala Friendly Beef, it is suggested that this meat should be retailed at a price between 'normal' and 'organic' lamb prices. A starting point of around 10 per cent is recommended, although a higher premium may be achieved once the scheme is recognised.

Claims and messages
There is a strong claimed level of interest in buying Green Tick Natural Damara lamb amongst lamb buyers, despite the diversity of messages presented. However, marketing of the product would be easier if less and more powerful claims were made. These should emphasise both the environment and the purity of the product, as these themes were important to target consumers. It was apparent that consumers did not understand the claims associated with the Green Tick Natural label, with only 13 per cent recalling that the lamb had been produced without harming the environment.

The poor consumer understanding of the Green Tick Natural claims suggests that promotion of the product during the trial was inadequate. Consumers interviewed during the trial said that much more promotion was required, and one of the retailers mentioned that the promotion of the environmentally-labelled meat was inadequate. He suggested that some form of in-store promotion, such as a tastings combined with verbal and written information dissemination, was required for effective product sales. Even though Green Tick Natural Damara lamb posters, brochures and meat tags were present in this store, they were not obvious, as they were lost amongst the large number of other promotion materials in the store.

For Green Tick certification to have an impact on the purchase decision, the organisation needs to develop its profile in Australia as a recognisable and credible force for environmental protection.

7.7 Discussion

Some segments of consumers, such as well educated and affluent consumers that value high quality and naturally produced meat (Anon 2005b), appear willing to pay higher prices for meat that is certified 'environment-friendly'. If this occurs, then environmental labelling programs will be able to recognise and reward good land and livestock management, and encourage the implementation of these practices by the producers that supply these niche markets. While this sounds promising in theory, there is little in the way of practice that can be evaluated to determine if these potential market benefits exist.

No Type I eco-labelling schemes (international ISO 14024 standard plus external auditing) and very few Type II environmental labelling programs (individual business claim plus self-audit) are available for use by pastoral and other primary producers in Australia. Type I eco-labelling programs, which are very well developed and have been in existence for several decades in many countries, are unsuitable for and are rarely if ever applied to fresh foods. The small number of Type II labelling programs operating in Australia are generally restricted to private marketing groups such as Q-Exports International's *Purely Natural Beef* brand (http://www.q-exports.com.au/brands.htm), King Island Beef Producer Groups *Natural Beef* brand (http://www.kingislandbeef.com.au/), and Bindaree Beef's *The Natural Beef Company* brand (http://www.bindareebeef.com.au/products.htm), and are not available to this pilot project's producers.

Another recent example of a private environmental label is that of the Gippsland Natural Beef producer marketing group (http://www.enviromeat.com.au/). This group has recently

developed and trialled its own *Enviromeat* label, and like other similar labels or brands, this is only available to members of that marketing group. Members of this marketing group that produce *Enviromeat* must be successfully audited to ISO 14001, comply with the requirements of the Meat Standards Australia standard for meat eating quality, operate free-range grazing enterprises, and not use hormone growth promotants. *Enviromeat* was first sold in Farmers Markets but has since expanded into a small number of premium retail outlets in Melbourne. Surveys of people that have purchased *Enviromeat* found that meat tenderness was a commonly reported trait, and that the attributes of environmental care, free-range grazing and an absence of chemicals encouraged them to purchase the product (Anon 2005b). *Enviromeat* regularly sells at a premium of 15 per cent above normal retail prices for equivalent product, and even at this price this marketing group claim to have many repeat customers.

The two Queensland marketing trials reported here also indicate that environmental labelling programs have the potential to differentiate and add value to meat sold in some segments of the domestic market, as consumers at all six stores expressed high levels of interest in the two environmentally-labelled products. Seventy-six and 81 per cent of customers interviewed claimed that at a 10 per cent premium, they were 'very' to 'extremely' interested in purchasing Green Tick Natural Damara lamb and Koala Friendly beef respectively. However, as noted by other studies (Giraud 2003, Twyford-Jones *et al.* 2005), consumers often over-estimate their purchasing behaviour during surveys, with actual purchases much less than their claimed purchase intentions. Consequently, the consultants commissioned to undertake these two marketing trials (see Luxton 2005) used a standard formula to adjust claimed consumer purchasing intentions and provided more realistic estimates of demand for each product.

The adjusted estimates of consumer demand for the two products were quite similar, with demand for Koala Friendly beef being only two to three per cent higher than each of the equivalent price categories for Green Tick Natural Damara lamb. Given these small differences, overall consumer demand for both products is estimated between:

- 25 and 45 per cent would purchase these products if they were the same price as equivalent conventional product;
- 15 and 30 per cent would purchase these products if the premium was 10 per cent;
- 8 and 18 per cent if the premium was 25 per cent; and
- 5 and 10 per cent if the premium was 40 per cent.

The upper end of these demand estimate ranges, representing the maximum sales thought possible, assume that all consumers fully understand the concepts associated with the environmentally-labelled products, that these products are always available, and that no other factors, such as eating quality, limit sales. It is unlikely that all of these conditions can be met, and therefore, expected sales figures for these environmentally-labelled products are more likely to be in the mid to lower range of the estimates for each price category. Given these qualifications, premiums of between 10 and 15 per cent seem achievable in these market segments, with perhaps 20 per cent of consumers willing to purchase environmentally-labelled meat at these prices (Luxton 2005). This is comparable with the price of *Enviromeat* in Victoria, which is generally sold at approximately 15 per cent above normal retail price (Anon 2005b).

While estimates of consumer demand for the two environmentally-labelled products were quite similar, actual product sales during the trials were markedly different. On average, 47

per cent of consumers interviewed purchased Koala Friendly beef (73 per cent at Allsop and England, 56 per cent at Simon's Gourmet Gallery, 12 per cent at Diamond Meats), compared with an average of only 13 per cent for Green Tick Natural Damara lamb (20 per cent at Superior Meats, 10 per cent at the Butcher's Block, eight per cent at Meat Your Lifestyle). As such, sales figures varied considerably between products and stores.

Given that both of the environmentally-labelled products were sold at the same price as equivalent unlabelled products, the overall sales figure for Koala Friendly beef, being 47% of consumers interviewed, exceeded the maximum demand predicted by the marketing trials. This is largely due to the very high sales figures at Allsop and England and Simon's Gourmet Gallery, with sales well above predicted maximum levels. At Allsop and England, all beef in the shop was labelled Koala Friendly, and therefore customers that wanted beef had no other choice. Also, the management and staff of Allsop and England actively promoted Koala Friendly beef to their customers, further contributing to the high sales figure.

Surprisingly, a higher than predicted number of consumers at Simon's Gourmet Gallery also purchased Koala Friendly beef. This was not expected, due to a wide range of competing products available in this store, combined with a lower level of product promotion. The only product in this store that was labelled Koala Friendly was fresh rump steak, and therefore, customers were able to choose from a wide range of unlabelled fresh meat cuts and partly prepared meals. Furthermore, management of this store were sceptical about the product, seemed somewhat reluctant to offer it for sale, and therefore did not actively promote it to their customers. In spite of these limitations on sales, more than half of the customers interviewed purchased Koala Friendly beef. This indicates that consumers at this store had a genuine interest in this product, and suggests that Koala Friendly beef could be successfully marketed at Simon's Gourmet Gallery.

The sales figure for Koala Friendly beef at Diamond Meats, being just 12 per cent, was in line with expectations. For most of the trail, this product was only available in a small meat freezer containing organic meat at the back of the store, and therefore most consumers entering the store did not see the product. While posters and brochures were present, Koala Friendly beef was not actively promoted to the majority of this store's customers, as this product was not positioned amongst the fresh cuts of meat that they wanted to purchase. Under these circumstances, it is not surprising that predicted sale figures were not realised.

In contrast to the sales of Koala Friendly beef, sales of Green Tick Natural Damara lamb were well below the levels predicted by the trials. Sales figures at all stores were less than the minimum predicted demand figures of 22 to 45 per cent, and are probably indicative of the low sales that can be expected when management are not committed to the product. Green Tick Damara lamb competed with a range of unlabelled fresh beef, chicken and lamb cuts at all stores, and similarly, the posters and brochures competed with a number of other product promotions. In addition to this, management of the three stores were concerned about the quality of the product, believing it to be inferior in taste and tenderness to their regular lamb, and consequently they did not actively promote it to their customers. Also, compared with Koala Friendly beef, fewer consumers understood the claims associated with Green Tick Natural Damara lamb, and therefore, clear and strong reasons for purchasing it may not have been evident to them. Given these factors, it is not surprising that only 13 per cent of consumers interviewed actually purchased Green Tick Natural Damara lamb.

The concern about the eating quality of the Green Tick Damara lamb and its adverse impact on sales highlights the importance of these attributes. As reported elsewhere (Backshall 2000, Brah and Schelleman 2000, McCoy and Parlevliet 2000, Anon 2005b), high levels of food safety and excellent eating qualities are paramount to retailer and consumer acceptance of and willingness to pay a premium for environmentally-labelled meat. While consumers appear to value good environmental management and animal husbandry practices on farms, they will only pay more for these if they perceive that this results in a safer, healthier and better eating product. If environmental labelling is to be successful, then it is essential that future marketing efforts convince consumers that there are strong correlations between good environmental management (especially naturalness), the humane treatment of animals, meat safety, meat nutrition, and eating quality.

To adequately evaluate the benefits and costs of environmental labelling of fresh meat, more than a short-term trial is required. Environmentally-labelled meat would need to be sold for a much longer period of time to a wider range of consumer segments before marketing and other benefits can be ascertained. It takes time for consumers to become aware of and understand the concepts behind an environmental label, and the eating qualities of the meat also need to be evaluated over a longer period of time. It is estimated that at least three months of sales of environmentally-labelled meat would be needed to test and record consumer responses to such a product. This could commence with an intensive two-week promotional campaign within each retail outlet and be followed by several months where a variety of meat cuts bearing the environmental label would be made available to consumers.

At this present time, any market benefits arising from environmental labelling will only be available to a small proportion of the meat producers in Australia. This is due to consumer demand being limited predominantly to small segments of consumers, perhaps those located in inner city suburbs, who value and who are both willing and able to pay more for these products (see Giraud 2003). It seems that while there are a small number of examples where environmental labelling appears to have delivered market benefits (Anon 1999, 2005b), these seem to be the exception (Durham *et al.* 2003, Twyford-Jones *et al.* 2005). In particular, members of the main stream markets, such as national retailer chains, did not see much benefit in using green trademarks or brands from certifying bodies on foods, as consumer demand was low and the costs of supply would be higher (Cary *et al.* 2004).

A brief account below is given of the characteristics of supply chains needed to successfully supply environmentally-labelled meat, and a profile of the consumers they could target.

Characteristics of effective supply chains

The producers and their associated processor and wholesaler partners that are best placed to supply these niche markets will be those that are able to consistently service the high quality requirements of premium retail outlets and their customers. The supply chains that service these retail outlets must first produce meat with unquestionably high levels of food safety and eating quality. As such, this meat must be tender, tasty, healthy, well presented, and with no hint of animal husbandry chemical residues. Furthermore, supply chains must be able to deliver this meat to the retailer on a weekly basis, every week of the year.

The retailer also plays a crucial role in the sales of these products, as they must continually promote the product to consumers, and provide constructive feedback to producers on how the product can be improved. Retail outlets that are more likely to successfully sell environmentally-labelled meat are those that have:

- supportive management who believe the product offers a benefit for their customers;
- a high proportion of the target consumer segments (see below);
- an existing focus on meat quality, especially emphasising its 'free-range', 'hormone-free' and similar features; and
- little or no prepared meals, as the composite meal detracts from issues about the origin of the meat.

Effective promotion of the product to consumers is absolutely crucial, and limitations with this during the trials were observed by both consumers and retailers. Similarly, consumers interviewed about *Enviromeat* in Victoria also identified a need for more promotional materials (Anon 2005b). Consumers are over-whelmed by product advertising within stores, and for this reason may not notice individual promotions, and if they do, they often have little time to consider them. For environmentally-labelled meat to capture significant market share, it will be necessary for retailers to display this meat in prominent positions within their stores, to personally draw consumer attention to the new product line, and to explain its benefits.

As with the retailer, the other members of supply chains also have crucial roles in capturing and maintaining market share for environmentally-labelled meat. As shown by the Pat's Organics supply chain during these marketing trials, tried and proven relationships between producers, processors, wholesalers and retailers are essential for the delivery and presentation of a consistently high quality product to consumers. All members of supply chains must be aware of the crucial role that they play in the delivery of this product, and work constantly at maintaining high standards. Members must also be aware of and value the roles played by their supply chain partners. In short, the supply chains that deliver this product to the consumer must be highly specialised and highly coordinated, and continually strive to improve the quality of the product and services they offer to consumers. The supply chains that are more likely to achieve these results are those that, over substantial periods of time, have developed strong personal relationships, rapport and trust.

It is probably no coincidence that the Koala Friendly marketing trial, involving a number of businesses that had been working together for several years, ran more smoothly and was more successful. In comparison, the Green Tick Natural Damara lamb trial was based on a new and untested supply chain. The lamb producers and the abattoir were not experienced with the production and processing of a high quality product that was required by the participating retailers, and did not always deliver this. With regard to meat eating quality, the production and processing practices developed by Meat and Livestock Australia (MLA 2003a, 2003b) provide an excellent guide to supply chains that wish to deliver consistently high quality products.

Profile of target consumers

These marketing trials were not based on a random sample of consumer segments in Brisbane, and neither was it possible to identify and select representative samples for inclusion in the trials. Consumer profiles at the different stores varied, and therefore it is possible to compare these with the variable sales figures and interest levels. However, the extent to which the management of the retail outlets supported and actively promoted the environmentally-labelled meat also varied considerably, and this had a large bearing on the levels of consumer interest shown during the marketing trials. This variable support and promotion made it difficult to be definitive about the profile of the consumers that are likely to be most interested in environmentally-labelled meat.

Based on the results of the two marketing trials reported here, the consumer segments that are likely to be most interested in environmentally-labelled meat are those with higher proportions of:

- Females;
- Childless households or households where children have left home;
- People with higher incomes;
- Consumers of certified organic meat or those that value free range, low input, chemical-free meat;
- Consumers of high quality or premium fresh meat, and
- People that are concerned about the environmental impacts of grazing.

This profile is largely consistent with the demographic profile described by Anon (2005b), being:

- Females;
- Adults between the ages of 35 and 45;
- Those that are well-educated; and
- Those with higher income.

However, Anon (2005b) reported that the demographic profile of green consumers can be difficult to define, 'as greenness extends throughout the population to varying degrees, and because green concerns are extremely diverse, encompassing a wide range of issues'. Also, while almost all consumers claim to be concerned about the environment, many of them do not act on their concerns. It is those consumers that are concerned about the environment to the extent that they have changed their behaviour to reduce their environmental impacts that are more likely to purchase green products (Said 1996). These consumers are not necessarily more common within in any one demographic segment, making it difficult to target them. However, it is logical that affluent and well educated consumers are more likely to purchase green products (as reported in Anon 2005b). These consumers are more likely to be aware of and understand the environmental issues associated with livestock production, and how production practices affect food safety and meat eating qualities. They also have the capacity to pay higher prices for premium environmentally-labelled products. For these reasons it is suggested that these consumers are more likely to be present in the affluent inner city suburbs of the large capital cities, and patronise retail outlets that sell premium fresh produce.

7.8 Conclusions

Environmental labelling has the potential to differentiate and add value to fresh meat, delivering market benefits such as customer loyalty, repeat sales, new market opportunities and price premiums. However, these benefits occur only at the niche market scale.

For market benefits to be realised, it is essential that environmentally-labelled meat is of premium quality, with consistently high levels of eating qualities (appearance, taste and tenderness) and food safety.

Members of supply chains, from producers through to wholesalers, also play crucial roles in the supply of environmentally-labelled products. They must consistently produce a safe product with excellent eating qualities, and make this available every week of the year.

Retailers also play a critical role within supply chains. Without their active support and promotion it will be impossible to develop consumer interest and demand for environmentally-labelled products.

Awareness and reputation of the certifying organisation is also important. Consumers place more trust in environmental groups and government regulators than they do in commercial organisations, even when the latter is an accredited certifier.

The target consumer for environmentally-labelled product does not closely fit into any one demographic profile. The people that will purchase this product are those that act on their high level of concern for the environment. They are also likely to be people that value and are willing to pay for high eating quality meat. Target consumers are also more likely to be female, well educated and affluent.

When introducing an environmentally-labelled meat product into the market, the following actions are recommended:

- Develop and promote a profile for the product and concept prior to the trial, so that shoppers have at least some familiarity with this;
- Promote environmentally-labelled products through environmental networks such as those provided by large environmental organisations, and through environmental, women's and organic magazines;
- Identify specific market segments for targeting, such as those with higher proportions of females, well educated and affluent people, consumers of premium quality produce, and suburbs or outlets that have a high proportion of these people;
- Build consumer support for the product at these stores and hone supply chain operations before considering expanding into other markets;
- Only work with supply chain partners that have the capacity to consistently supply high quality product, and who are fully supportive of and committed to the product;
- Link messages of environmental protection and animal welfare with meat safety and eating quality; and
- Use further promotion at point of sale to boost consumer involvement, possibly including taste testing and/or staff on site to explain the product benefits.

8. Ethical wool labelling and market research

8.1 Introduction

Over the last decade, world consumption of wool has declined by 10 per cent from an average annual consumption of 1.76 million tonnes in the 1980s to 1.59 million tonnes in the 1990s (ABARE 2003). This decline occurred while total consumption of apparel fibres rose, including both synthetics and cotton.

The wool industry is now looking for alternative markets and products to regain its market share. This requires the industry to invest in product innovation and to actively promote its key attributes, such as product quality and sound land and livestock management. As such, there is interest in the potential of claims of high levels of animal and environmental care to differentiate and add value to Australian wool.

Levels of social and environmental awareness of consumers and the community at large are slowly increasing, due in large part to the promotion by organisations such as PETA (People for the Ethical Treatment of Animals), the CCC (Clean Clothing Campaign) and LBL (Labour Behind the Label) of what they regard as the unethical practices of supply chains. In response to this, a growing number of textile producers and garment makers have developed social and environmental performance standards that they require their suppliers to meet. In this respect, they use either their own policies or standards, or generic textile industry standards such as Oeko-Tex 100 (Oeko Tex 2006) for chemical residues, ISO 14001 or Oeko-Tex 1000 for environmental issues, and SA8000 (Social Accountability 2002) for labour practices. The companies that are most active in this area are those that have very well known retail names or brands, as they have the most to lose from adverse publicity.

Government regulations are also driving change in the practices of wool supply chains. Russell (2001, 2004) has observed that environmental legislation in Europe is imposing significant constraints on European wool processors. Australian exporters of raw and processed wool to the European Union (EU) may also be affected by these policies, as it could mean that EU clients will increasingly choose to buy wool with low levels of chemical residues.

It is apparent that the emerging requirements of textile markets cover more than just the environmental performance of supply chains, and may include worker employment conditions, fair prices for suppliers, consumer health and safety, and animal welfare. Consequently, textile markets are more interested in the overall ethics of their supply chains, and for this reason, the wool that meets these requirements has been called ‘ethical-wool’ by this pilot project. In recognition of the factors that are of interest to textile markets, this pilot project has defined ethical-wool as wool that has been produced in accordance with accepted standards for environmental management, employment conditions, fair trade, consumer health and safety, and animal welfare.

While there appears to be some textile market interest in wool that is ethically-produced, the level of demand and subsequent market opportunities are not clear. Representatives of Iz-wool (a supply chain company from Western Australia) and Roberts (a supply chain company from Tasmania) both believe that particular market segments within the United States (US) and the EU are expressing significant interest in wool that is produced by sustainable and

ethical practices, and that these markets have the potential to utilize a significant proportion of Australian wool clip (Stuart Adams and Eric Hutchinson pers. comm. November 2005).

In contrast, representatives from Elders and BWK Elders have repeatedly reported little customer interest in 'environment-friendly' wool (Maurie McNeil and Michael Blake pers. comm. 2004-2005). Similarly, other major wool brokers, including Australian Wool Network and Landmark, also report little demand for this type of wool.

In spite of the mixed messages about market demand, 13 of the 30 wool growers from western Queensland that have participated in this pilot project have expressed interest in the production and marketing of 'environment-friendly' wool, being wool that is compliant with the European eco-label for textile products and other textile eco-labels.

The mixed signals regarding market demand for sustainable or ethical-wools, combined with the interest of wool growers in supplying this wool, have prompted this pilot project to directly investigate market demand and requirements.

This chapter begins with brief descriptions of a range of standards that can be used to define and certify wool that is ethically-produced. It then summarises the methods and main findings of research into international market demand and requirements for ethical-wool, including familiarity with and interest in ethical standards. This pilot project, in conjunction with Australian Wool Innovation (AWI), commissioned the Woolmark Company to undertake this research. The full results are contained within the report titled *Market research into potential customer requirements and demand for ethical-wool* (Woolmark 2006).

8.2 Standards for ethical-wool production

There are a number of standards that can be used to define and certify ethical production and/or processing within wool supply chains. For example, there are numerous environmental standards, with the most prominent being EMS (ISO 14001) and environmental labels (ISO 14021 and ISO 14024). A well known and applicable environmental standard is the European eco-label for textile products. Many countries in the EU have equivalent national eco-labelling programs, as does Australia (Good Environmental Choice). Also, the eco-labels previously described in Chapter 7, Green Tick and Koala Friendly, are applicable to the wool industry.

A number of standards also address human ecology (health and safety) and/or social issues (employment conditions, fair trade), with examples being Oeko-Tex 100 and SA8000 respectively. In addition to this, some standards address both social and environmental issues, such as Eco-Tex.

A number of commonly available standards that can be used to define and certify ethical-wool are briefly described below. The ethical-wool market research will determine the relevance of these standards to international wool trading, including awareness and use of them by selected apparel companies.

European eco-label for textile products

For textiles to be labelled with the European eco-label, they must comply with a number of environmental and quality criteria. Assessments are made based on a product's environmental impact over its entire lifecycle, from fibre production to product disposal. However, the environmental criteria of the European eco-label for textile products are mostly concerned

with the types and quantities of chemicals used during the processing and manufacturing. As such, this standard has minimal application to the wool growing or property level of supply chains. In this respect, it contains a chemical residue standard that sets upper limits for chemical residues present in raw wool. Information on this eco-label can be found at http://ec.europa.eu/comm/environment/ecolabel/product/pg_clothing_textiles_en.htm#gendescrip

Green Tick

As described in Chapter 7, Section 7.4, Green Tick Certification Limited provides third-party sustainability certification. The main label of the Green Tick organisation is Green Tick Sustainable. This is the foundation for four other Green Tick brands or labels, including Green Tick Natural, Green Tick Organic, Green Tick GE-Free, and Green Tick Fair Trader.

The Green Tick labelling programs place considerable emphasis on health and safety aspects of a property's operations. A formal health and safety manual, that addresses the main OH&S aspects of a property, is a requirement of this standard. Green Tick also requires that properties comply with their standards for the use and management of natural resources, chemicals, energy and wastes. See http://www.greentick.com for more information on Green Tick labels.

Koala Friendly

This is a recent labelling program of the Australian Koala Foundation, as described in Chapter 7, Section 7.2. This label addresses a wide range of sustainability criteria, covering natural resource management, livestock husbandry and care, chemical usage and waste management. Information on this label can be found at http://www.savethekoala.com/ecolabel.html.

Certified Organic

Certified organic wool must be produced on a certified organic property from certified organic sheep. Hence, all farm and all livestock production and husbandry practices, and not just those related to the animals, must comply with the organic standard.

There are at least seven organisations in Australia that certify properties with regard to an organic standard. While each certifying organisation has their own slightly different standard, all comply with the National Standard for Organic and Biodynamic Produce (see http://www.affa.gov.au/content/output.cfm?ObjectID=EE2A0857-E689-4CFB-8073162C0466D3B6).

Eco-Tex

Eco-Tex standards are administered by the Eco-Tex Institute for Applied Ecology, which claims to be an independent and market-oriented consulting organisation. The Eco-Tex Institute is a provider of systems assuring sustainable management, covering environmental management, social accountability, work safety and quality assurance. Social, OH&S, quality and environmental issues are addressed through an integrated management system similar to EMS and ISO 9001 (see http://www.eco-tex.de/navi.htm#).

Oeko-Tex 100 and 1000

The Oeko-Tex 100 standard addresses human ecology by screening for harmful substances present within processed textiles that come into contact with consumers. This standard only addresses the finished textile goods.

The Oeko-Tex 1000 standard expands on the human ecology philosophy of Oeko-Tex 100 by encompassing the ecology of production. It does this by verifying the environmental performance of a production site, enabling products produced at that site to be audited and certified as environmentally sound. For more information on these two standards see http://www.okotex.com/en/main.html.

SA8000

SA8000 is a standard of Social Accountability International (SAI). This standard is based on international workplace norms in the International Labour Organisation (ILO) conventions and the United Nation's Universal Declaration of Human Rights and the Convention on Rights of the Child. It addresses child labour, forced labour, OH&S, the right to collective bargaining, discrimination, discipline, working hours and compensation. See http://www.sa-intl.org/index.cfm?&stopRedirect=1 for more detail.

BSCI

The BSCI (Business Social Compliance Initiative) is designed for use throughout Europe (http://www.bsci-eu.org/content.php). Its main aim is to improve social performance in supplier countries through a uniform social standard, addressing workplace issues that are similar to those covered by SA8000.

8.3 Scope of the ethical-wool market research

This EMS pilot project and Australian Wool Innovation (AWI) have commissioned The Woolmark Company to undertake research into the interest, requirements and demand of selected international markets for ethical wool.

The main objectives of this market research were to:

- investigate the current and potential future demand for ethical-wool;
- identify market segments that offer the most potential for Australian ethical-wool; and
- determine the market opportunities, in terms of likely size of market, the best prospective companies, the level of interest, the qualities required, the standards required, and possible supply chain players.

On advice from representatives of a number of prominent wool industry groups and organisations, this market research was restricted to geographical areas that were believed to have the greatest potential demand for ethical wool. These areas were:

- Western European Union;
- Japan; and
- Market segments within the USA.

This consultancy did not seek to identify consumer (end user) responses, and instead only investigated down-stream supply chain (particularly retailer and brand company) requirements. It is these companies that have the greatest influence on the type of fibres and the production and processing practices used for apparel.

Market segments that were considered included:

- Specialist, large and leading apparel manufacturers, retailers and brand companies that are marketing themselves as 'environment-friendly';
- Large mainstream manufacturers and retailers of apparel, such as suits, coats, knitwear, women and baby wear;

- Relevant Retail Trade Associations; and
- Textile Trade Associations.

The types of apparel companies that were targeted by this market research are listed below. They include:

1. Specialist, large and leading brand and retail companies that currently market 'clean and green' garments and/or use natural fibres, such as those that comply with the following standards or descriptions:
   - European eco-label for textile products;
   - Other wool eco-labels (e.g. Eco-tex, Oeko-tex);
   - Certified organic;
   - Low chemical residues;
   - Naturally produced fibres; and
   - ISO 14001 (EMS).
2. Specialist large and leading brand or retail companies that produce children's wear and next-to-skin apparel, particularly in the active outdoor and sports wear sectors;
3. Large brand companies and retailers that are concerned about their public and corporate image, and who want to promote their ethical supply chain practices; and
4. Large integrating supply companies that manage supply chains for major brand companies or retailers, and thereby deliver finished garments to them.

8.4 Methodology: ethical-wool market research

The methods used to conduct research into market demand and requirements for ethical-wool are summarised below. Details of the methodology can be found in the accompanying report by the Woolmark Company which was engaged by this pilot project to conduct this market research. The report is titled *Market research into potential customer requirements and demand for ethical-wool* (Woolmark 2006).

The countries and regions in which interviews occurred were Japan, the USA, the UK, Spain, France, Italy, Germany, the Scandinavian region and Switzerland.

To begin with, an initial list of companies was developed from which a smaller number of companies were selected to be interviewed.

8.4.1 Selection of companies to be interviewed

An initial list of apparel companies identified as potential targets for interviewing, consisting of 170 companies, was compiled using a combination of existing company knowledge held by Woolmark staff in the various countries and other research conducted using predominately web-based tools. The selection criteria were broadly based on a mix of larger, main-stream apparel retail, brand and manufacturing companies, and more niche but still significant companies. The sample of companies selected was not random, rather, the types of companies selected had inherent biases towards wool and ethical related themes. No independent sampling techniques were used. Given the relatively small sample size of the final number of interviews, this was a qualitative study rather than a quantitative study.

The initial company list was kept broad and relatively balanced in terms of ethical claims, wool usage, main business type (retailers/brand partners), demographics (menswear versus women's wear, formal versus casual), and market size (turnover). Some broad principals were used to select companies for this initial list, such as not selecting companies involved in the

low price point/high volume market segment. Wool does not compete particularly well in this segment, as associated consumers are less likely to be influenced by 'credence' attributes such as ethical production and processing practices. On the other hand, large retailers and brand companies that were concerned about their corporate image and had developed policies to protect this were targeted for this list.

The apparel companies were described by company name, brand(s), market size, main fibre types, market segments/core business, target demographic, and marketing strategy.

The apparel companies were also categorised in accordance with:

- Their main business: retailer (Dept or Specialist/Chain), brand manufacturer/wholesaler/manufacturer;
- Ethical claim and description;
- Company size: market turnover/sales (value);
- Demographic segment: women's wear, menswear, and children/baby-wear; and
- Product segment: formal, casual, sport/active outdoor, and intimate.

The 36 target companies that would be interviewed were then selected from this initial list of 170 apparel companies using four selection criteria.

Criterion 1: Region/Country

Firstly, as a project requirement, a minimum number of companies were required to be interviewed in each of the three regions nominated – USA, Japan and Europe. Within Europe, the countries identified as of particular interest were Germany, France, Italy, Spain, UK and the Scandinavian group of countries.

A relatively balanced approached has been adopted for the companies to be targeted by region/country. However, the proportions of interviews by region/country have been adjusted according to the relative size of the apparel markets across the three regions (Table 8.1).

Table 8.1. Proposed interviews by region and country.

Region	**Country**	**Face-to-face Interviews**	**Telephone Interviews**	**Total**
North America	USA	10	2	12
Asia	Japan	10		10
Europe	Germany	3		3
	France	2		2
	Italy	3		3
	Spain	1		1
	United Kingdom	3		3
	Scandinavia	2		2
Total		34	2	36

Criterion 2: Ethical product or claim

A fundamental question that was answered through the market research interviews was 'Will there be demand for ethical wool in the future?' Due to the priority of identifying future demand in this research project, and to ensure the results were not overly biased towards companies that currently have 'ethical' claims, the second criteria in selecting target companies within a region/country was an even split in the number of companies with an ethical product/claim and those without.

For this project, ethical product apparel companies were defined as having an ethical 'claim' on one or more apparel segments/products (non fibre specific) that they either retail or produce; or a general claim regarding the overall company such as Corporate Social Responsibility (CSR). As identified in the desk research, 'ethical' within the context of the apparel retailer/supply chain and for this project, fits into one of four categories:

1. People: business practices/corporate responsibility, child labour, prison labour, workers' rights/labour practices, oppressive regimes, oppressive working conditions, sweat shops;
2. Environment: organic, pollution, chemical use and residues (raw fibre production through to manufacturing including dyeing), sustainable energy use, sustainable environmental use (land and water), low 'footprint' on the globe (reduced energy and water usage);
3. Animals: testing, factory farming, mulesing and live sheep exports are important in the wool industry; and
4. Other: Genetic engineering.

For example, a retailer or brand partner claiming to sell Certified Organic or Fairtrade cotton garments was defined as an 'ethical product' company within the context of this project.

Criterion 3: Wool versus non-wool usage

Within the subset of companies categorised as 'ethical', consideration was given to whether the sample should be restricted in anyway by fibre type. To answer this question several key points were considered.

To begin with, the number of companies within the target list that had an 'ethical' claim that related to wool was low. Anecdotally, this appears to be a function of the current market, with ethical claims relating to specific woollen products being at a more embryonic stage, compared with cotton. As such, selecting only companies that have an 'ethical wool product' would bias the sample towards companies with a small/niche market size and low retail turnover.

Furthermore, by restricting a significant proportion of the target companies to fit within the 'ethical wool product' category would have meant that companies that make general ethical claims regarding their brand's image (non range/fibre specific), such as those with a Corporate Social Responsibility policy, would not have been interviewed. Companies such as these are likely to have valuable insights into the future demand for the ethical apparel market.

Therefore, the criterion for selecting the target companies was not based on whether the ethical claim is an 'ethical wool product' or not. However, where possible, and within the overall framework of maintaining a 'balanced approach' to the target list, companies were included that had an 'ethical wool product'.

At a broader level within the 'ethical' company category, a minimum of 80 per cent of the companies selected were current users of wool. However, to ensure a broader understanding of the future of ethical apparel demand, the target list within the ethical category was not restricted by the level of wool usage. Hence, some selected companies used only small amounts of wool.

In contrast, within the category of ‘non-ethical’ companies, only those companies that were users of wool were targeted, so as to focus particularly on the future demand for ‘ethical wool’. For any significant volume increase in the future demand for ‘ethical wool’ to occur, it will more than likely have to occur through a degree of diffusion from the current niche/small segments into the ‘mainstream’ wool retail market. It is within this context that current non users of wool were omitted from the ‘non-ethical’ category.

The use of these three selection criteria to select companies that would be interviewed is shown diagrammatically in Figure 8.1. This shows the percentage of companies in each category that were determined by the selection criteria.

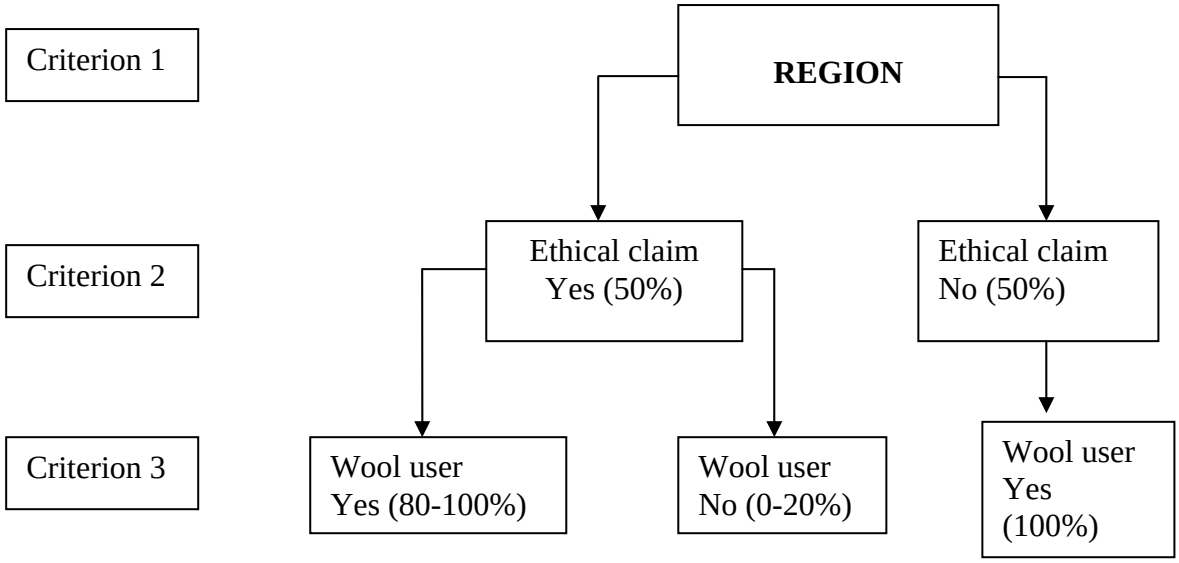


Figure 8.1. Application of the first three selection criteria used to select companies.

A fourth selection criterion was then used to identify the final list of companies to be interviewed.

Criterion 4: Balance of other company characteristics
The last criterion for selecting target companies was to maintain a degree of balance of companies across a range of selected characteristics, being:

- Retailer versus brand partner/manufacturer;
- Niche versus large sales turnover;
- Women’s wear versus men’s wear (or both); and
- Casual versus formal.

As expected, a significant number of companies identified had a significant ‘cross-over’ in certain areas. For example, it was not uncommon for a manufacturer/brand partner to also own retail speciality stores. This, combined with the low number of interviews per region/country relative to the starting company list, limited the potential to create further restrictive selection criteria.

As such, some broad weightings were applied when selecting target companies to maintain an overall balance of the types of companies interviewed. These were as follows (the proportions in brackets are guides only):

A. Retailer (50%) versus Brand Partner/Manufacturer (50%);
B. Women's wear (50%), men's wear (40%), children's/baby wear (10%);
C. Formal (30%), casual (40%), active/outdoor (20%) and intimates (10%); and
D. Market Size ($ sales): large/medium (70%) versus small (30%).

These weightings were considered when selecting companies across each region (criterion one stage) rather than at the criterion two stage.

A relatively balanced approach to the number of retailers versus brand partner and/or late stage manufacturers was felt to be warranted as both have significant influence in the retail pipeline, notwithstanding some regional differences. No justification could be found as to why the number of target companies should be skewed towards either retailers or brand/manufacturers.

Market size based on company sales/turnover by value was deemed important, to ensure that the interviews were not either all large companies or equally all smaller companies. It was felt the inclusion of both was important. The weighting towards larger companies reflects the importance of determining if the demand for 'ethical wool' in the next three to five years will to any extent occur in the mainstream market. This has important implications for determining if the volume of demand for ethical wool will be significant in terms of the Australian wool clip, or rather continue to be a 'niche' market.

The broad weightings for market segment (women's wear, men's wear etc) and sub segment (formal, casual, sports/active outdoor) were based on the relative importance each contribute to total wool sales. A slight over-weighting of active/outdoor was allowed for, given this was identified as a likely growth area for ethical wool.

However, due to the level of 'cross-over' of categories in the women's and men's wear categories and formal versus casual versus sport/active outdoor, these percentages were relatively 'academic', and not a major determinant by which companies were targeted.

Using the selection criteria, a total of 72 companies were selected from the initial list of 170 companies in the interview pool. This was double the total number of companies to be interviewed, as some companies were likely to reject the request to be interviewed or that the relevant company employee may not be available within the time-frame of the market research.

This list of 72 companies was divided into 'primary' and 'secondary'. The primary companies, due to their closer match with the four selection criteria, were the most preferred or most suitable companies to be interviewed. However, it was assumed that in some cases a primary company may not be available for interview, and hence a secondary company was identified. While these had very similar attributes to the primary company, they often did not match as closely with the selection criteria.

As a result of the application of the selection criteria, 36 of the initial 170 companies were selected as the primary targets for interviews. The proportions of these 36 companies that fell into categories arising from the selection criteria are shown in Table 8.2.

Table 8.2. Proportions of the primary companies in selection criteria categories.

	Europe	**USA**	**Japan**
Number of companies	14	12	10
% Ethical	50	50	50
% Small companies ($ turnover)	35	25	30
% Retailer (Dept)	14	17	20
% Retailer (Specialist/Chain)	64	83	30
% Brand Partner/ Manufacturer	57	83	60
% Using wool fibre	86	92	100
% Men's wear	93	100	90
% Women's wear	100	83	90
% Children's wear	64	75	50
% Formal	50	33	80
% Casual	86	100	70
% Sports/Active Outdoor	64	50	50
% Intimates	50	60	30

The 36 primary and 36 secondary companies selected are listed in Table 8.3 below.

Table 8.3. The identity and key attributes of primary and secondary companies.

Companies are listed under their respective regions and countries.
Those in italics are companies that have 'ethical' products or policies.
R denotes retailer (dept or specialist) and B/M denotes brand partner/manufacturer.
Sales ($) denotes estimated value of sales (turnover) by value.

Region: Europe

Total interviews: 14.
Countries: France, Germany, Italy, UK, Spain, Denmark, Sweden or Norway

France								
Interview No.	Primary				Secondary			
	Company Name	Example of Brands	R or B/M	Sales ($)	Company Name	Example of Brands	R or BM	Sales ($)
1.	*Redoute*	*Somewhere*	*R B/M*	*€ 3.8bn*	*Armor Lux*		*R B/M*	*€ 60mn*
2.	Lacoste		R B/M	€ 650bn	Groupe Etam	123	R B/M	€ 1.0bn

Germany								
Interview No.	Primary				Secondary			
	Company Name	Example of Brands	R or B/M	Sales ($)	Company Name	Example of Brands	R or B/M	Sales ($)
1.	*Hess Natur*	*Hess Natur*	*R*	*€ 53mn*	*Steilmann*		*R B/M*	*€ 175mn*
2.	*C & A*	*Clockhouse. Westbury, Your Sixth Sense*	*R B/M*	*€ 2.7bn*	*Adidas*	*Climacool, Arcterys, Bonfire*	*B/M*	*€ 6.5bn*
3.	Karstadt Quelle	Neckermann	R	€ 1.2bn	Kaufhof		R	€ 3.8bn

Italy								
Interview No.	Primary				Secondary			
	Company Name	Example of Brands	R or B/M	Sales ($)	Company Name	Example of Brands	R or B/M	Sales ($)
1.	*Benetton*	*Killer Loop, Sisley, Play Life*	*R B/M*	*€ 2.2bn*	*Giorgio Armani*	*Georgio Armani*	*B/M*	*€ 1.5bn*
2	Valentino Group	Valentino, Hugo Boss, M Missoni, UomoLebole	B/M	€ 1.8bn	Marzotto	Marzotto, Guabello, Marlane, Tessuti di Sondrio	B/M	€ 1.7bn
3.	La Rinascente	Emporio Armani, Calvin Klein	R B/M	€ 308mn	Coin	Coin, Oviesse	R	€ 1.0bn

Spain								
Interview No.	Primary				Secondary			
	Company Name	Example of Brands	R or B/M	Sales ($)	Company Name	Example of Brands	R or B/M	Sales ($)
1.	*Inditex Group*	*ZARA*	*R*	*€ 4.8bn*	*Inditex Group*	*Massimo Dutti*	*R*	*€ 533mn*
					Mango	*MNG*	*R*	*€ 831mn*

UK								
Interview No.	Primary				Secondary			
	Company Name	Example of Brands	R or B/M	Sales ($)	Company Name	Example of Brands	R or B/M	Sales ($)
1.	*Marks & Spencer*		*R*	*€ 8.0bn*	*John Lewis*		*R*	*€ 2.4bn*
2.	*Mosaic Fashions*	*Oasis. Karen Millan*	*R*	*€ 300 mn*	*Arcadia Group*	*Top Shop, Top man, Dorthy Perkins*	*R*	*€ 1.7bn*
3.	Burberry	Burberry	R B/M	€ 715mn	Paul Smith	Paul Smith	R	€ 230mn

Denmark								
Interview No.	Primary				Secondary			
	Company Name	Example of Brands	R or B/M	Sales ($)	Company Name	Example of Brands	R or B/M	Sales ($)
1.	Back Tee		B/M	€ 14mn	Clipper		B/M	€ 10mn

Norway or Sweden								
Interview No.	Primary				Secondary			
	Company Name	Example of Brands	R or B/M	Sales ($)	Company Name	Example of Brands	R or B/M	Sales ($)
1.	Helly Hansen			???	Swix Sports (Norway)		B/M	€ 50mn

Region: North America

Total interviews: 12
Country: USA

USA								
Interview No.	Primary				Secondary			
	Company Name	Example of Brands	R or B/M	Sales ($)	Company Name	Example of Brands	R or B/M	Sales ($)
1.	*Federated Merchandising Grp*	*Bloomingdale's: Polo/Ralph Lauren, Jones New York*	*R*	*US$ 2bn*	*Nordstrom*	*Classiques Entier, Edun, Nordstrom*	*R*	*US$ 7.7bn*
2.	*REI Recreation Equipment*	*Patagonia, North Face*	*R B/M*	*US$ 1bn*	*J Crew*	*J Crew Collection*	*R B/M*	*US$ 800mn*
3.	*Abercrombie & Fitch*	*Abbercrombie & Fitch*	*R B/M*	*US$ 2.8bn*	*American Apparel*	*American Apparel*	*R B/M*	*US$ 250mn*
4.	*LL Bean*	*LL Bean*	*R B/M*	*US$ 1.4bn*	*Eddie Bauer*	*Eddie Bauer*	*R B/M*	*US$ 1.2bn*
5.	*Timberland*	*Timberland*	*R B/M*	*US$ 300mn*	*Eileen Fisher Inc*	*Eileen Fisher*	*R B/M*	*US$ 125mn*
6.	*Lost Arrow Corp*	*Lotus Designs, Patagonia, Water Girl*	*R B/M*	*US$ 200mn*	*Cutter & Buck*	*Cutter & Buck*	*B/M*	*US$ 127mn*

USA (continued)								
Interview No.	Primary				Secondary			
	Company Name	Example of Brands	R or B/M	Sales ($)	Company Name	Example of Brands	R or B/M	Sales ($)
7.	Northern Department Store Grp		R	US$ 3.5bn	Dillard's	Roundtree & Yorke, Antonio Melani	R	US$ 7.8bn
8.	Colombia Sportswear Company	Columbia Sportswear, Mountain Hardwear	R B/M	US$ 1.2bn	Gottschalk's Inc.	Gottschalk's, Village East	R	US$ 677mn
9.	Jos. A Bank	Jos. A Bank, Luxury Signature, Trio	R B/M	US$ 373mn	Men's Wearhouse Inc	K & G, Moores	R B/M	US$ 1bn
10.	Hartmarx Corporation	Cambridge, Hart Schaffner & Marx	R B/M	US$ 1.2bn	Aeropostale	Aeropostale, Aero, Jimmy 'Z Surf	R B/M	US$ 1.2bn
11.	Sears Holding Corp	Land's End	R B/M	US$ 1.6bn	Pendleton Woolen Mills Inc	Pendleton	R B/M	US$ 250mn
12.	Perry Ellis International	Perry Ellis, Axis, Savane	R B/M	US$ 800mn	Urban Outfitters	Urban Outfitter, Anthropologie	R B/M	US $1.1bn

Region: Asia

Total interviews: 10
Country: Japan

Japan								
Interview No.	Primary				Secondary			
	Company Name	Example of Brands	R or B/M	Sales ($)	Company Name	Example of Brands	R or B/M	Sales ($)
1.	*AEON*		*R*	*¥ 349bn*	*Ito Yokado*		*R*	*¥ 315bn*
2.	*Isetan*	*BPQC*	*R*	*¥ 211bn*	*Mitsukoshi*		*R*	*¥ 284bn*
3.	*Mont-Bell*	*Mont-Bell, Zero-point*	*R B/M*	*¥ 18bn*	*Patagonia Japan*	*Patagonia*	*R B/M*	--
4.	*Itochu*		*B/M*	--	*Fair Trade Company*	*People Tree*	*R*	*¥ 0.62bn*
5.	*Toabo*		*B/M*	*¥ 22bn*	*Kurabo*		*B/M*	*¥ 11bn*
6.	Takashimaya		R	¥ 293bn	Seibu		R	¥ 180bn
7.	Mizuno		B/M	¥ 144bn	Decent		B/M	¥ 44bn
8.	Itokin		B/M	¥ 143bn	World		R B/M	¥ 182bn
9.	Konaka		R	¥ 496bn	Aoki International		R	¥ 57bn
10.	Onward Kashiyama		B/M	¥ 197bn	United Arrows		R B/M	¥ 46bn

8.4.2 Company interviews

The 36 companies and organisations that were selected as primary companies were the companies that were first approached to be interviewed. Of these, 31 were interviewed face-to-face, and a further two by telephone.

The interviews of companies were undertaken between 25th April and 2nd of June 2006.

The people that were targeted for interviews were the relevant experts in each company, and as such, needed to be in a senior position (managing director, sales directors, marketing directors, designers), and have corporate responsibility for sales/marketing policies, purchasing policies and/or responsibility for corporate social responsibility and ethical policy. Two key people from each company were invited to be present at the interviews that were conducted in their offices.

Each interview was conducted in the same manner, using a questionnaire designed specifically for this purpose. This questionnaire was structured so that it began with broad questions about 'ethical products', to discover the interviewees' unprompted interest in and understanding of 'ethical' issues associated with apparel products. It then progressively narrowed in scope to address specific raw wool issues and questions. This approach was taken so that interviewee responses would not be led by information provided by the interviewer.

A further principle used in developing the questionnaire was to obtain, where possible, evidence from interviewees to support their responses and claims. This included examples from each company interviewed of ethical apparel products, price differences, sales figures and so on.

The questionnaire was developed through a series of iterations, with the initial draft being revised after review by Woolmark. A subsequent draft was revised after comments from Woolmark's on-the-ground staff in Germany, Japan and the US, and from the Project Managers at QDPI&F and AWI.

Each interview lasted from between 45 minutes and one and a half hours.

The interviews were conducted by Woolmark personnel who were experienced native speakers in each country. Interviewers were briefed by telephone by the central Woolmark office in Melbourne, in accordance with a standard briefing document and the standard questionnaire. These interviewers:

- translated the questionnaire (where necessary);
- arranged interviews with the senior responsible manager in each company;
- interviewed the relevant senior managers;
- recorded in writing the response to the questionnaire from each interview; and
- collated and translated (where necessary) the qualitative responses.

The quantitative responses were all collated and analysed at Woolmark's Melbourne office.

Each interviewee was asked for their approval or otherwise to release their individual responses, and if required, to use their attributed comments in the final report. The interview responses only identified the respondent if that respondent agreed to disclosure.

8.5 Results: ethical-wool market research

The responses of the 33 companies to the interview questionnaire are summarised below under a number of subject headings. For the full responses, see Woolmark (2006).

Importance of attributes when sourcing apparel products for your company
When sourcing apparel products or fibre, companies were asked to rank the importance of 12 attributes. Product quality was ranked as the most important attribute, followed by harmful substances, product functionality, social responsibility, product comfort and price.

Environmental sustainability in processing, suppliers brand and natural fibre content were the next most highly ranked attributes. Animal welfare, on-farm environmental sustainability, genetically modified were the least important.
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Interpretation of the term ethical
In general, the interviewees defined ethical in terms of environmental and social responsibility. Specific mentions were made of labour issues and rights and the impact on the environment.

Ethical trading policies
Eighty-one per cent of the companies interviewed claimed to have either an ethical trading policy or products that were regarded as ethical (produced in accordance with an ethical claim or standard such as Oeko-Tex 100).

Important ethical elements
Of the five categories of ethical issues presented, the companies interviewed unanimously identified people/corporate social responsibility as the most important. The next most important category was environmental sustainability at the processing and farm levels, followed by animal welfare and genetically modified.

Ethical apparel product ranges or labels
Just over 40% of companies indicated that they had an ethical apparel product range or labelled ethical lines. However, a number of companies did not include products carrying labels such as Oeko-Tex 100. If these were included, then almost 70% of companies had ethical products/lines.

The categories of apparel that contained the most ethical lines were casual/leisure wear and active/outdoor/sports wear.

Size of the ethical apparel market
Overall, the ethical apparel market segment is small or niche in size, accounting for approximately one per cent of the total apparel market.

The best prospects for growth were in the casual and active product lines.

On average, 57 per cent of the expected growth in the ethical segment was predicted to come from the conversion of existing conventional products, but 30 per cent was estimated to represent new demand. Around 13 per cent of companies thought that the expected growth would be both new demand and conversion of existing products.

Consumer demographics
Companies interviewed believed that the typical consumer of ethical apparel was likely to be female, between 25 and 54 years of age, with high or moderate levels of income and education, and a purchaser of casual or active wear products.

Pricing
Just over 70 per cent of respondents said that ethical apparel was sold at a premium in their country, due largely to the higher cost of production. Typically, this premium was 20 per cent, but varied between 5 and 50 per cent. When all responses were taken into account, including those that said no premium was paid, the average premium was 14 per cent.

Labelling and certification
Around 95 per cent of companies said that they required ethical claims to be made in relation to an agreed standard, and substantiated through an audit or certification. Almost 80 per cent of respondents said that the audit should be done by either an independent 3rd party or an official trade association. Only 13 per cent said that a self-audit was adequate.

Similarly, almost 80 per cent of companies said that consumers were increasingly demanding certification of claims made on apparel.

When asked to identify ethical labels that they were familiar with, a wide range of responses were given. The most common labels were organic, Oeko-Tex, EU eco-label and other European eco-labels, Fair Trade, Eco-Tex, and a number of private brands. Only a few companies did not know of any ethical labels/brands.

Of the western European companies interviewed, 60 per cent said they currently used the Oeko-Tex label, 25 per cent used Fair Trade, 17 per cent used the Blue Angel eco-label, 10 per cent used the White Swan, and 10 per cent used the AENOR label. No companies used the EU eco-label.

In Japan, just over 20 per cent of companies interviewed used Oeko-Tex, 20 per cent used the Eco Mark eco-label, and around 10 per cent used Fair Trade.

None of the US companies interviewed claimed that they used ethical labels.

Sourcing ethical apparel
Just over 70 per cent of companies interviewed said that they required their suppliers to comply with some form of ethical specification. This was often their Code of Conduct, but also included specifications for particular ethical issues, such as child labour or factory working conditions.

Of the companies that have sourced ethical apparel or fibre, almost half had experienced difficulties with limited supply. Other difficulties experienced were high prices and lower quality. Most of these experiences occurred with organic cotton, although at least two Japanese companies experienced the same problems with sourcing organic wool.

Perceptions of wool as an ethical product
Almost half of all respondents said that wool was perceived as an ethical product. In particular, the production of raw wool was regarded as ethical, whereas processing was generally thought to be less ethical. Some companies thought that there was a need to draw

consumer attention to the ethical attributes of wool, and were prepared to help with this. In the US, a number of companies were aware of the PETA campaign against mulesing, and this adversely affected their perception of wool as an ethical product.

Approximately half of the companies interviewed believed that wool was either more ethical or equally ethical as cotton or recycled man-made fibre. Over 80 per cent believed that wool was more ethical than man-made fibres.

Ethical wool market share

Just over 40 per cent of the companies interviewed had ethical woollen apparel products, although this ranged from 85 per cent in Japan to just 25 per cent in western Europe. The most common ethical wool products lines were casual, active and intimate.

While all companies were asked to estimate the ethical wool share of the total ethical apparel market, most had difficulty in answering this. For most product lines, the ethical wool share was less than 10 per cent of the total ethical apparel market. Ethical wools share of the formal wear sector was higher, at 14 per cent.

However, most respondents believed that the ethical wool market share would grow over the next five years, particularly in the areas of casual wear, active wear and intimates. In the US, companies thought that most growth would occur in the active wear and intimates sectors.

Where growth in ethical wool market share was expected, companies interviewed estimated that around 50 per cent of this would be due to conversion of existing product. In addition to this, around 25 per cent of this growth was expected to be new demand.

Ethical wool as an alternative to organic cotton and wool

Only 20 per cent of companies interviewed believed that ethical wool could be an alternative to organic cotton. However, more companies (47 per cent) considered ethical wool as an alternative to organic wool.

Important ethical issues in the wool pipeline

The most important ethical aspects for the entire wool pipeline were labour rights and business ethics. These rated more highly than pollution and chemical residues during processing, and prices paid to producers/suppliers, all of which were similarly rated. On-farm environmental sustainability and animal welfare were least important.

Companies from the US and western Europe indicated that labour issues and business ethics were unlikely to become more important in the future, and in contrast, they expected that environmental issues would rise in importance, both at the processing and farm level.

Ethical issues at the farm level were poorly understood by the companies interviewed, and this made it difficult for them to rate their importance. At the farm level, companies rated accepted standards for chemical residues more highly than environmental sustainability, certified organic and animal welfare. Genetic modification was the least important ethical issue at the farm level. However, it appears that ethical issues at the farm level are not important to the companies interviewed.

Country of origin
Over 80 per cent of companies said that the country of origin was an indicator of the environmental sustainability of wool. Overall, New Zealand was regarded as the country with the highest environmental sustainability image (45 per cent of companies), followed by Australia (35 per cent) and then the United Kingdom (14 per cent).

Consumer perception of brands versus certification labels
While half of all companies interviewed thought that consumers placed equal importance on ethical brands and ethical labels, companies from the US indicated that brands were more important.

Price premiums for on-farm ethical wool assurances
Just over half of the companies interviewed, particularly those from Japan and western Europe, said they would pay a premium for on-farm ethical assurances. They acknowledged that assurances require additional time and effort, but qualified their responses by saying that they would only pay a premium if the certification system was well known by consumers. Also, over time, they expected that prices would fall as supply grew. At this stage, 15 per cent of companies were prepared to pay a five per cent premium, 15 per cent would pay a 10 per cent premium, and 15 per cent were prepared to pay premiums of between 15 and 30 per cent. The average premium that companies are prepared to pay at the farm level, including those companies that would not pay any premium, was nine per cent.

The companies that would not pay a premium claimed that consumers would not be willing to pay higher prices, and instead, they expected this for all apparel. They claimed that meeting ethical standards should be mandatory, and that over time the market would gradually weed out suppliers that were not ethical.

Companies interviewed commonly said that promotion of the ethical attributes of wool was needed to increase consumer awareness and demand for ethical wool.

Sourcing ethical wool
Only 25 per cent of companies had attempted to source ethical wool. Companies that had tried to source ethical wool found it limited in availability, costly, of variable quality, and they claimed that they did not have the resources needed to verify the ethical claims of suppliers, particularly at the farm level.

Around 57 per cent of the companies interviewed said they were currently interested in sourcing Australian ethical wool, with demand increasing substantially to near 90 per cent over the next two to five years.

8.6 Main findings of the ethical wool market research

The current and potential future demand for ethical-wool:

- will remain in the eco-niche scale over the next 5 years;
- is strongest and growing most in segments where wool is not well placed, such as casual wear, sportswear and intimates – formal wear fares less well;
- will ride the positive growth trend in casual wear (particularly sweaters), active wear and intimates; and
- is fairly consistent across western Europe, the US, and Japan.

Possible supply chain players

- best prospective customer companies are those with right customer demographics or brand positioning/leading retailers that can sustain a brand premium and who are committed to championing a long-term ethics program.

Potential commercial payoff from on-farm ethical wool is limited, as:

- market-pull signals are currently weak;
- there is little knowledge at the retail and consumer level of on-farm wool growing practices in Australia;
- on-farm issues rated relatively low, with animal welfare the lowest;
- functionality/supply continuity and price are problem issues for ethical wool product, and as such there is a need to offer additional product benefit/functionality or overcome perceived problems with conventional wool, such as itchiness; and
- the expected on-farm premium is 9% (on average).

However, Corporate Social Responsibility and processing ethics rated relatively highly, providing the best opportunity for advancing market development or industry image positioning for ethical wool.

Growth in ethical wool product is likely to be gained at some expense to conventional wool product, but this may be positive at the global scale where competing wool growers will need to meet the same ethical standards.

Approximately 25 per cent of growth in ethical wool sales is expected to be new demand, and this may be an opportunity for increasing overall market size for wool.

There is a need to improve on-farm ethical production, as:

- there is a general view that ethics will continue to grow in consumers' minds and increase in sensitivity, and the Australian wool industry needs to respond to this; and
- risk mitigation is where the main benefit is, protecting Australia's image as an ethical wool supplier

Risk mitigation is the main justification for the industry spending funds in this area (on-farm wool ethics) rather than on the specific development/positioning of ethical wool products.

Retailers and brand company understanding of current on-farm practices is low. Consequently, there is a need for education and promotion of Australia's ethical wool growing practices to the down-stream pipeline players.

The Australian wool industry does not know how the cradle-to-grave benefits and costs of wool compare with other fibres, such as cotton. This work needs to be undertaken to determine if improvements are required, and to become the basis of an industry-wide educational/promotional program.

As part of the risk mitigation strategy, there is a need to bolster overall on-farm standards in terms of ethics/ environmental/ chemical residues, in an attempt to 'raise the bar' at an international level. Accordingly, there is a need to educate growers of underlying trends and minimum future requirements for ethical production.

Another key finding was the requirement of retailers/brand partners for assurances (auditing and certification) in relation to on-farm ethical practices. It will be important to develop standards that have integrity so that retailers/processors have confidence in them, but without placing onerous costs/regulation on growers. In this respect, a range of auditing options should be available, from grower self-audits based on new standards, to auditing by an independent third-party or official industry/government organization/trade association.

9. Conclusions and recommendations

This chapter begins with the main conclusions drawn by this pilot project about the development and implementation of EMS and environmental labelling within the pastoral industry of western Queensland. This is followed by a SWOT (strengths, weaknesses, opportunities and threats) analysis associated with the application of the Pastoral EMS, and ends with recommendations for future implementation of EMS within the pastoral industry.

9.1 Conclusions

This section presents the main conclusions associated with each of the objectives of this pilot project. These objectives were:

1. Develop, apply and evaluate on-farm EMS for pastoral properties in Queensland;
2. Add value to the EMS by building on it with private environmental labelling of pastoral products, including a Koala Friendly label of the Australian Koala Foundation; and
3. Develop and market test meat and wool products bearing environmental labels.

9.1.1 Develop, apply and evaluate on-farm EMS for the pastoral industry

This objective is covered by the following components of this pilot project:

- Customising EMS for the pastoral industries;
- Recruitment of pastoral producers;
- EMS training for pastoral producers;
- Development and implementation of EMS;
- Benefits and costs of implementing EMS; and
- Future of EMS in western Queensland.

Customising EMS for the pastoral industries

The position taken by this pilot project at the outset was that pastoral producers in western Queensland were not ready for and would not significantly benefit from the introduction of a fully compliant ISO 14001 EMS. As a consequence, a streamlined form of EMS, focusing on the main action-oriented elements of the ISO 14001 standard, was developed. This product, called the Pastoral EMS, consisted of seven elements that constituted a continuous improvement management system.

The Pastoral EMS was further customised for western Queensland producers through the use of familiar language and relevant examples and explanations. Overall, it allowed producers to quickly and simply develop and implement their EMS, and therefore achieve early results directly relevant to their property. Pastoral business relevance and producer ownership were encouraged by allowing producers the freedom to address any component of their business and integrate this with other plans or schemes, such as QA and OH&S.

Recruitment of pastoral producers

The factors that most enabled recruitment of producers into this pilot project were the offer of a simplified EMS customised to their industry and region, an intensive promotional campaign, engagement of producer groups, and prompt personal contact. Personal contact and visits from pilot project staff known by producers were particularly effective.

Recruitment was limited by EMS not being well known or understood by most producers in the region, and this combined with an emphasis on the environment was likely to have

dissuaded some producers from trialling it. Similarly, a number of producers may have chosen not to participate because EMS was promoted by a government agency at the same time unpopular State Government NRM policy had been introduced.

There may also have been some producer confusion between EMS and the multitude of other planning programs and processes available to them. In this way, EMS was just another program competing for their time and energy.

In spite of these limitations, EMS promotion and the recruitment of producers into this pilot project were relatively successful. Producers from more than 100 properties expressed interest in EMS, and of these, producers from 37 properties commenced development and implementation.

The producers that were attracted to EMS at this early stage believed that it could be used to communicate good environmental management practices to external stakeholders, strengthen their environmental management, assist them keep up to date with legislative developments and possibly improve market access. An early assumption of this pilot project, that the target for recruitment of 30 producers would not be achieved unless the adoption of EMS was linked with the sales and marketing of meat and wool, proved incorrect.

EMS training for pastoral producers

Overall, the facilitated approach to EMS training, where producers learnt about the Pastoral EMS while developing it for their property, was successful. The most effective elements of this training were that the pilot project team delivered this training directly to producers on or near their properties at no cost. The training was also flexible in that producers could undertake it as a group or individually, and they could choose the number and frequency of meetings.

Training groups of producers was more successful than individuals. Group meetings were structured with pre-determined meeting dates and agendas, covered explanations of the Pastoral EMS in more depth, contained more activity focussed training, and encouraged producers to write much of their EMS during meetings. In addition to this, working with groups is much more efficient, enabling trainers to assist many more producers than would be possible if this was done individually.

The simplified nature of the Pastoral EMS also enabled producers to be quickly trained in an entire cycle of the Pastoral EMS. Training materials, including the *Pastoral EMS Guide*, posters, ISO 14001 compliant examples and a number of learning activities, all helped improve producer understanding of EMS elements, as they catered for different learning styles.

This pilot projects willingness to provide all producers with individual and personal assistance with any aspect of their EMS encouraged them to continue development and implementation.

The least successful element of the training was that most training meetings with individual producers had little structure, as meeting dates and content were negotiated on a one-to-one basis, with the individual having considerable influence over both the timing and material covered. Also, explanations of the steps of the Pastoral EMS were brief compared with those offered to groups, few activities were used and the writing up of their EMS was mostly left for them to do in their own time.

Producer development and implementation of EMS

Of the producers from 40 properties that were trained in the Pastoral EMS, 37 commenced development and implementation. It is unlikely that this would have occurred if producers were required to adopt a fully compliant ISO 14001 EMS, due to the additional time required to develop and document the extra elements, lack of relevant examples, and unfamiliar terminology. Instead, the Pastoral EMS gave producers a basic entry level into EMS, and due to its simplified nature, it was not difficult, time consuming or costly for producers to meet its requirements.

Development of EMS by producers was mostly restricted to the facilitated learning workshops or meetings run by pilot project staff. Few producers continued to develop their EMS outside of the time provided in the training workshops, and after documenting all seven elements of the Pastoral EMS, they lost motivation to further develop and implement this.

As with training, the initial development and documentation of EMS was most successful with producers working in groups due to the peer pressure, group leadership, social engagement, collective ideas and more time spent during meetings documenting their EMS.

Implementation of EMS, particularly action and monitoring plans, was left up to the producers and this pilot project did not play a major role in this respect. Most producers are still implementing their action and monitoring plans, and most have chosen not to address current priority issues such as drought within their EMS. While many producers appear enthusiastic and committed to EMS when working with pilot project staff, this enthusiasm waned when they no longer had that support.

Towards the end of their first EMS cycle, producers were encouraged to expand their Pastoral EMS in accordance with a range of options offered, including sustainable grazing, National Livestock Identification Scheme (NLIS), Livestock Production Assurance (LPA), QA and additional ISO 14001 elements. However, almost all producers continued to work within the boundaries of the Pastoral EMS and did not utilise these options. Better uptake of these options may have occurred if they were integrated into the Pastoral EMS at the outset, rather than offered as optional extras at a later date.

After almost two years of working on EMS, the processes, purpose and benefits of a management system are still unclear to a large number of producers involved in this pilot project. Instead, producers regarded the Pastoral EMS as a complete and final package, and consequently do not intend to review or revise it. For this reason it is evident that the training provided by this pilot project did not place sufficient emphasis on the workings of management systems.

Additionally, producers thought that the Pastoral EMS did not contain sufficient guidance for them on the most important environmental, production and marketing issues in their region and industry sector, and the industry BMP they could use to address these. While this is not normally a function of EMS, many producers require this information.

Benefits and costs of implementing EMS

After a period of almost two years of development and implementation of EMS by pastoral producers, few significant tangible benefits and a number of costs or limitations have been identified. However, using a comprehensive benefit-cost analysis to make decisions about the

future role of EMS in the pastoral industry is premature. EMS development and implementation is still in its infancy in the western Queensland pastoral industry, and more time is required for the main benefits and costs to emerge.

So far, EMS had little influence on producer adoption of industry BMP, including natural resource management practices. Similarly, EMS implementation resulted in few changes to the goals and objectives of producers, and had little impact on their understanding and use of catchment plans, formal business plans, OH&S and QA schemes. However, increased adoption of these practices and schemes could not be expected at this early stage of implementation, particularly as producers were advised to keep their first EMS cycle simple, and training did not provide them with the information and tools needed for this.

At this early stage, the main benefits of implementing the Pastoral EMS reported by producers were improved awareness of risks, clear and documented objectives and targets to work towards, increased monitoring and more recording of this information.

As such, the main benefits of EMS development and implementation have been internal business benefits, such as documentation and record keeping. While this is not surprising, these types of benefits are not highly valued by most producers in the pastoral industry. Consequently, the time and other resources expended on this tend to be regarded as a poor investment.

The main costs associated with EMS development were time and travel and even these were minimal. Time was mainly associated with participating in training and completing the documentation requirements of the Pastoral EMS, while travel was only a cost for those producers who attended group meetings. Implementation costs were not assessed.

Future of EMS in western Queensland

At the end of this pilot project, the large majority of participating producers surveyed said they would continue EMS implementation. However, there are a number of reasons why this result is likely to be an over-estimate of what will actually occur. To begin with, most producers believed that they have and are using an EMS, even though they have little intention of reviewing and/or building on this in the future. Consequently, they may not have fully understood that continued use of EMS means repetition of the continuous improvement cycle. Again, this may be due to this pilot project providing insufficient training in the workings of management systems.

Secondly, there were extended periods of time when most producers did not develop or implement their EMS, with activity largely restricted to the occasions when pilot project staff interacted with them. Not surprisingly, the two factors that producers said most encouraged their progress with EMS implementation were assistance from pilot project staff and the meeting schedule. It is concluded that most producers would not have progressed through an entire cycle of the Pastoral EMS without the coordination, encouragement and assistance provided by the pilot project.

Thirdly, feedback from producers on their experiences with EMS indicated that they believed the costs of EMS implementation outweighed the benefits. When asked what would encourage them to continue developing and implementing their EMS, the most common responses by far were market benefits and financial incentives, neither of which are available at the present time.

The immediate costs of EMS development are obvious, whereas many of the benefits, such as improved condition of natural resources, regulatory relief, improved access to the natural resources base, and market advantages will all take several years to emerge, if at all. Under these circumstances, where costs are obvious and immediate and benefits are risky and distant, producers lose interest in EMS.

At the present time, the benefits of EMS are tenuous. This will remain so until governments and industry develop a national policy framework whereby the possession of one EMS makes it more likely that producers will be able to access multiple benefits such as regulatory relief, market advantages, ecosystem service payments and business grants.

In the absence of effective external drivers, such as market benefits, most producers will not decide to adopt EMS unless government and/or industry promote this and provide free or low-cost training and development, involving considerable personal contact. While this assistance may be effective at gaining initial producer involvement, it is unlikely to sustain on-going development and implementation of EMS. In this respect, EMS must eventually succeed on its own merits.

9.1.2 Add value to the EMS by building on it with environmental labelling

EMS, including certified ISO 14001, does not provide a label that can be used to convey the good environmental management practices of producers to consumers. In contrast to this, the main purpose of environmental labels, such as Type I (ISO 14024) and II (ISO 14021) programs, is to differentiate products on the basis of superior environmental performance.

EMS and environmental labelling are complimentary. An EMS provides a systematic process for planning, achieving and documenting the requirements of an environmental label. On the other hand, an environmental label sets environmental performance targets for an EMS, and then seeks market benefits by notifying consumers of this superior environmental performance.

However, very few environmental labels are available to Australian food and fibre producers, including the producers from western Queensland participating in this pilot project. Consequently, almost all of the producers implementing the Pastoral EMS did not have access to an environmental label, and this limited their capacity to pursue market benefits. Producers from only four of the 37 participating properties had an opportunity to access environmental labels, as they were involved in this pilot projects marketing trials.

Environmental labelling of meat

The development of the Certified Koala Friendly environmental label for pastoral enterprises that occurred within this pilot project showed that environmental labelling can be done in a relatively short period of time. However, as with the Green Tick Natural label, considerably more time and resources need to be spent promoting labels, to increase supply chain and consumer awareness and acceptance. Ultimately, success cannot be claimed until significant numbers of businesses in meat supply chains implement the labelling program and consumers regularly purchase products carrying these labels.

In addition to this, labelled products must meet consumer requirements for eating quality and food safety. It is apparent that consumers who value and are willing to pay more for environmentally-labelled meat expect a high level of eating quality, particularly tenderness.

Environmentally-labelled meat must be consistently tender and be free of livestock husbandry chemical residues.

This pilot projects meat marketing trials showed that when the necessary ingredients for consumer support can be met, such as full recognition and understanding of label concepts, constant availability of product, and high levels of food quality and safety, then an environmental label is capable of differentiating and adding value to meat. Based on consumer purchase intentions, both market share and product price can be increased through environmental labelling.

However, the small volume of environmentally-labelled meat traded means that production and processing costs will be higher than those for equivalent conventional product. Also, the costs of compliance for producers and processors, such as implementing new practices, audits and royalties, add further costs to environmentally-labelled meat. In this respect, an environmental label can only add value to conventional products if consumers are willing to pay higher prices for the end product.

At the current time, only niche markets, such as the well educated and affluent consumers of the inner city suburbs, appear willing to pay higher prices for environmentally-labelled meat. Consequently, value-adding through market benefit is potentially available to only a small number of highly specialised and dedicated livestock producers, processors and retailers.

The two environmental labels trialled during this pilot project were well received by a select and small number of inner city consumers and retailers. The high levels of consumer interest and good sales figures at some locations indicate that these labels have good niche market potential.

Environmental labelling of wool

Compared with meat, a wider range of labels are used in the wool textile sectors. However, few of these are dedicated environmental labels, as most address issues such as substances that may be harmful to human health and the working conditions of textile industry employees. Common labels are Oeko-Tex 100, SA8000 and Fairtrade, and eco-labels like the European eco-label for textile products.

In the retail wool sector, private brands are used more than certification labels to convey environmentally sustainable or ethical production and processing practices.

9.1.3 Develop and market test meat and wool bearing environmental labels

The medium to large established commercial companies associated with this pilot project did not have existing customers that wanted environmentally-labelled meat or wool, and these and similar sized emerging companies were unable to find sufficient numbers of new customers. This indicated that there were limited opportunities for the sale of environmentally-labelled meat and wool within mainstream markets.

Large meat and wool processors are mostly geared to the cost-effective production of large quantities of product for mainstream mass markets. Their emphasis is on efficiencies and turnover, and thus specialised niche market products have no place in these businesses.

Small businesses cannot compete on price with the large supply chain companies, and consequently tend to focus more on the supply of higher quality and more specialised

products. For this reason, small companies are likely to see more potential in environmental labels, as they can use them to differentiate and add value to their products. Small companies are also more willing and able to devote additional resources to the production and marketing of higher quality products.

However, companies that base their businesses on the supply of specialised premium food and fibre to niche markets face constant challenges. Their costs per unit volume of product are high, and their continued operation relies on the delivery of a premium product to a small segment of consumers. This high level of dependence and specialisation creates many risks, and makes it difficult for a company to become established and remain viable.

Meat marketing trials

The two environmentally-labelled meat marketing trials show that it is crucial for supply chains to be dedicated to the production and delivery of a high quality product to consumers. This requires a very high level of coordination, trust and cooperation between members of supply chains, with each member of the chain knowing and playing their role. Without this, the functioning of the chain deteriorates, and reliability and consistency of the product decreases. The difficulty in achieving this should not be underestimated, as there are many factors that can cause malfunction, and only one of these is required to break the chain.

To begin with, meat eating quality which is largely dependent on tenderness, is paramount. To produce this requires an even and continuous rate of growth in either lambs or young cattle, as checks in growth due to poor nutrition on properties will decrease tenderness. Tenderness can also be significantly impacted by practices at abattoirs. Abattoirs need to minimise stress to livestock prior to slaughter, and maximise tenderness through correct refrigeration temperatures, carcass hanging times, and carcass treatment practices, such as tender stretching and electrical stimulation. Similarly, the carcass treatment practices of the wholesaler must also maintain or improve meat eating quality.

The retailer must also perform the additional essential role of effectively promoting the environmentally-labelled meat to consumers. Without this, the product will be lost in a sea of other products and promotion in the store. Retail outlets that are more likely to successfully sell environmentally-labelled meat are those that have supportive management who believe that these products are of value to their customers, have significant numbers of the target consumer, and who have an existing focus on meat quality, especially emphasising free-range, hormone-free and similar features.

The target consumer for environmentally-labelled meat does not closely fit into any one demographic profile. The people most likely to purchase this product are those that think about livestock production practices when purchasing meat, and who regularly act on their high level of concern for the environment. They are also likely to be people that value and are willing to pay for high levels of meat eating quality, be female, well educated and affluent.

If the above preconditions for the supply and promotion of environmentally-labelled meat can be met, then environmental labelling does offer opportunities for differentiating and adding value to meat. It is estimated that at least 20 per cent of consumers that patronise quality butcher shops will be pay 10-15 percent premiums above what they currently pay for equivalent unlabelled products. However, these are niche market opportunities that can only be met by highly skilled and dedicated supply chains.

Ethical wool market research
The market research showed that a high proportion of overseas Australian wool customers place considerable importance on their social responsibility reputation. As such, they are sensitive to the ethics of their wool suppliers, and are increasingly developing Codes of Conduct or procurement policies that their suppliers are required to meet. Australian wool producers are potentially well placed to take advantage of this trend, but more needs to be done to improve and publicise their credentials as ethical wool suppliers. While current demand for ethically-produced wool is at a niche scale, Australia may be able to increase its global wool market share by positioning itself as a major supplier of ethically-produced wool.

9.2 SWOT analysis of the Pastoral EMS and environmental labelling

A wide range of strengths, weaknesses, opportunities and threats (SWOT) associated with the Pastoral EMS and environmental labelling have been identified and discussed throughout this report. The SWOT analysis below draws this information together to better enable an evaluation of the potential future roles of EMS and environmental labelling in the pastoral industry.

The strengths and weaknesses operate at the internal pastoral business level. In contrast, opportunities and threats exist in the external environment, being associated with organisations such as governments, regional NRM groups, markets, non-government lobby groups, industry organisations and commercial service providers.

9.2.1 Strengths

- The Pastoral EMS was specifically customised for the western Queensland pastoral industry.
- The simplified nature of the Pastoral EMS provided an easy entry point for producers wishing to trial EMS, and allowed them to quickly complete their first continuous improvement cycle.
- The Pastoral EMS was designed so that it could be developed and implemented by producers in stages, enabling them to expand this in the direction and time of their choosing.
- The Pastoral EMS has much in common with other forms of EMS and management systems, including Farm or Property Management Systems, enabling producers to transfer their work to these in the future.
- An intensive promotional campaign, including information days, group presentations and personal contact by the pilot project generated a large amount of producer interest in EMS.
- Pastoral EMS training was delivered to producers using a facilitated approach so producers could learn about EMS while developing it for their property.
- Pilot project staff provided producers, either one-on-one or in a group situation, with guidance and encouragement to develop their EMS.
- Pastoral EMS training was provided to producers on or close to their own properties.
- Producers were able to address a wide range of issues (environmental, production or marketing) within their Pastoral EMS.
- The highly structured training and development meetings delivered to groups, with set meeting times, agendas and learning activities, resulted in more producers completing their EMS more quickly.

- By developing and implementing the Pastoral EMS, some producers were able to improve their knowledge and skills.
- The documentation and records, particularly the environmental policy, associated with the Pastoral EMS can be used by producers to support their funding applications to Envirofund, regional NRM groups, and government grant programs.
- The Pastoral EMS was used to demonstrate some requirements of the environmental labels of the Australian Koala Foundation and the Green Tick organisation.
- Producers believe that future benefits, such as the ability to demonstrate that they are managing their properties sustainably, an improved ability to address environmental management issues and legal requirements, and improved market access will arise from EMS implementation.

9.2.2 Weaknesses

- The Pastoral EMS was not ISO 14001 compliant, and as such, producers were not able to gain the formal external recognition afforded by certification to this standard.
- Emphasis on 'environment' and the fact that it was promoted by a government agency may have discouraged some producers from trialing the Pastoral EMS.
- EMS, which tends to focus more on adverse environmental impacts, is not well suited to improving strengths and realising opportunities for a business.
- The Pastoral EMS design and the pilot project plan for delivering this to producers insufficiently communicated the staged nature of EMS development, including the management system options that could be integrated with this.
- Pilot project training did not instil in producers the workings and merits of continuous improvement management systems.
- Pastoral EMS training for individual producers lacked structure, contained brief explanations and few activities, and writing up of their EMS was mostly left for producers to do in their own time.
- There was limited guidance provided to producers on the content of their Pastoral EMS, particularly in terms of important regional environmental issues and the on-ground practices that could be used to address these. Information contained in regional NRM or catchment management plans was not accessed.
- Pilot project staff had limited knowledge or experience with pastoral industry programs such as QA, food safety, and OH&S, and because of this were not well placed to guide producers in the development and integration of these with the Pastoral EMS.
- Producers were able to develop a Pastoral EMS that primarily focussed on production or marketing issues, with only limited consideration of NRM.
- Producers often only documented what they were already doing or planned to do within their Pastoral EMS, and did not expand their thinking as a result of the EMS process.
- Development of the Pastoral EMS was followed by little implementation of action and monitoring plans.
- Many producers do not see a need for EMS, it is a low priority for them, and they allocate their time to other priorities.
- Implementation of the Pastoral EMS does not guarantee improved environmental performance or the acquisition of marketing and other benefits.

- Producers were not motivated to use their Pastoral EMS to address some of the major issues they were currently facing, such as drought.
- The Pastoral EMS was only trialled in a small sub-set of the western Queensland pastoral industry. Wider pastoral industry adoption requires greater involvement of relevant industry organisations and trials in other regions.
- The assistance provided by the National EMS Pilot Program to producers was short-term, and little assistance or incentives are available to encourage continued EMS implementation when the Program ended.

9.2.3 Opportunities

- The Pastoral EMS and the learnings from this pilot project provide a model for other organisations to consider and potentially use.
- The Pastoral EMS is an initial step in demonstrating the environmental stewardship intentions and practices of producers to external stakeholders.
- By participating in this pilot project producers have provided feedback that may influence the form of EMS that may be used in their industry in the future.
- The Pastoral EMS is a suitable process for achieving the requirements of environmental labels or brands.
- The Pastoral EMS, in combination with environmental labelling programs, could be used to develop supply chain alliances in niche markets.
- The funds provided by Envirofund, regional NRM groups, and other government funding programs may be more effective if producers receiving these have an EMS that shows how these funded activities fit into their overall property management plans.
- Government funded NRM programs may be better able to demonstrate results if more producers receiving grants used EMS to monitor and record on-ground changes.
- The trend for international retailers to require assurances from producers for minimum levels of food safety, animal welfare and environmental management is likely to be adopted by Australian retailers at some time.
- Australian industry organisations and governments should lobby for the global use of environmental and other production standards, so that competing producers from other countries also account for the environmental and social costs of production.

9.2.4 Threats

- There is little external recognition, such as by markets, financiers, and regulators, for EMS generally and the Pastoral EMS specifically.
- EMS may not be able to compete with the vast array of other planning processes that are promoted to producers, especially where regulations or contractual obligations stipulate use of alternative programs.
- Monitoring records and other information collected by producers implementing the Pastoral EMS could potentially be used against them in the future.
- The lack of awareness, understanding and appreciation of EMS within the pastoral industry and the wider community will limit widespread adoption.
- Some forms of EMS, such as a certified ISO 14001 EMS, have high compliance costs which may exceed the benefits gained by producers.

- Producers in Australia may be forced by domestic policy to adopt EMS or other forms of environmental assurance, and this will reduce their cost-competitiveness with producers in countries that are not required to do this.
- Organisations or people that believe a fully compliant ISO 14001 EMS is the minimum requirement may reject and discredit other forms of EMS.
- Processors and wholesalers are largely uninterested in the use of EMS and environmental labelling at the property level.
- No national eco-labels are available for use by producers that wish to differentiate and promote their good land and livestock management practices.

9.3 Recommendations

This section presents the major recommendations arising from this Pastoral EMS pilot project.

What is EMS?

Recommendation 1. That major agricultural organisations and relevant government agencies agree on a definition for EMS, and that this definition be restricted to continuous improvement management systems dedicated to environmental management, which are largely consistent with the ISO 14001 standard.

Recommendation 2. Where there is a desire to reduce the emphasis on the environment, address a range of other business issues, and deviate significantly from the ISO 14001 standard, the resultant management system should not be called an EMS. In this respect, industry organisations and governments should develop a more general management system approach, such as the Property Management Systems (PMS) proposal currently being considered as a national framework.

How should EMS be promoted?

Recommendation 3. Promotion of EMS, for the purpose of increasing adoption rates by producers, should target established producer groups, individual champion producers, regional natural resource management groups and other groups that have large networks of producers.

Recommendation 4. Promotion of EMS will be most effective if undertaken by organisations or individuals that producers know, respect and trust, and as much as possible, should occur through personal contact. Promoters of EMS should be people who have high levels of industry and EMS experience, and who can clearly and concisely explain EMS to producers.

How should EMS training be delivered?

Recommendation 5. As with EMS design, training materials and processes must be customised for particular industries and regions, and cater for the different learning styles and other requirements of individual producers.

Recommendation 6. EMS training should be delivered in a facilitated manner to enable producers to learn about EMS while developing it, and be available in their local area.

Recommendation 7. EMS training primarily should occur with groups of producers. However, if there is a need to train individuals then this should be conducted in a structured manner with set meeting dates, agendas and activities, similar to group training.

Recommendation 8. Skilled and professional trainers are required to design the training processes and materials, and to deliver the training. Experts on specific environmental and

industry topics should inform the development of training materials, and be available at training meetings to provide technical information, including industry BMP.

Recommendation 9. EMS training should occur in conjunction with other pastoral industry training packages, such as MLA's Edge Network Grazing Land Management program, to provide industry BMP tools and information that informs and adds value to the EMS process.

How to keep producers interested in EMS?

Recommendation 10. To improve adoption and relevance of EMS, its design should be customised for particular agricultural industry sectors and regions.

Recommendation 11. A staged and structured approach to EMS development and implementation, providing producers with a range of entry levels, is required to cater for varying individual, industry and regional circumstances.

Recommendation 12. This staged approach should commence with an environmental self-assessment activity that helps producers identify significant environmental issues and provide guidance on industry BMPs. Priority issues identified through this process would then be addressed by their EMS.

Recommendation 13. Possession of an EMS by producers should be recognised, valued and rewarded by external organisations such as regulators, industry bodies, grant providers, banks, insurers and markets.

Recommendation 14. Relevant government agencies and industry organisations should provide ongoing support and assistance to producers through the delivery of EMS training and development programs and through the establishment of professional and peer networks.

Recommendation 15. Producers should be encouraged to work in groups to develop and implement EMS due to the motivation and other benefits fostered by group work.

Market opportunities for environmentally labelled meat

Recommendation 16. Environmental labelling of meat should only be attempted by supply chains that can consistently produce and supply meat with very high levels of eating quality and food safety to niche markets.

Recommendation 17. Members of environmentally-labelled meat supply chains must be highly skilled, dedicated and disciplined, be aware of their crucial individual roles, as well as recognising and valuing the roles of other members in the chain.

Recommendation 18. The concepts of the environmental label should be clear, concise and easily understood by consumers, and emphasise the close relationship between good environmental management, animal welfare, food safety and eating quality.

Recommendation 19. The retailers of environmentally-labelled meat must actively promote and explain the concepts and benefits of the product to their customers, and place these products in prominent positions within their stores.

Recommendation 20. While target consumers do not fall neatly into any one demographic segment, supply chains should target consumers that patronise premium fresh meat outlets that have an emphasis on quality and safety.

Market opportunities for environmentally or ethically labelled wool

Recommendation 21. The best market opportunities for environment-friendly or ethical wools are with large retailers or brand companies that want to invest in protecting their corporate image by actively promoting their ethical sourcing practices.

Recommendation 22. The cradle-to-grave or lifecycle benefits and costs of wool need to be compared with those of other fibres. In this respect, the cost to growers of collectively

improving industry practices needs to be compared with the costs of a deteriorating image as an ethical supplier.

Recommendation 23. Following Australian wool life cycle benefit-cost comparisons with other fibres and wool produced in other countries, the Australian wool industry should re-evaluate the future positioning of wool regarding ethics/environmental issues.

Recommendation 24. Develop a range of voluntary industry best practice standards and auditing options for ethical wool production, to suit a range of market (both supply and demand) requirements.

Recommendation 25. Implement promotional and other strategies to encourage wool grower adoption of voluntary standards and industry best practice, to improve the ethical reputation of the Australian wool industry.-

Recommendation 26. When the Australian wool industry is satisfied with their ethical credentials, educational or promotional strategies are needed to convey this to retailers, brand companies, late-stage manufacturers, and consumers.

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Appendices

Appendix 1. Pilot project experiences with the National EMS Pilot Program.

1. Introduction

The aim of the National EMS Pilot Program was to test and enhance the potential of EMS as a business management tool for primary production, and to understand and address any limitations. This occurred through 16 pilot projects, representing a diverse range of industries, regions, partnerships and natural resource management issues.

The pilots also answered questions about practical and effective adoption of EMS on the ground, including EMS as an integrated management tool; effective tools for use within an EMS; EMS and the potential of markets to value the natural resource base that sustains agriculture; EMS in a regional context; and improving resilience through EMS implementation.

The National EMS Pilot Program was managed by URS Australia Pty Ltd with a team of seven staff, including a project manager, project director, EMS specialist, economist and three liaison staff whose role is to interface with their designated pilot teams.

The Project Liaison Officer for this pilot project, Matt Ahern, was based at Roma, in south west Queensland. All pilot project correspondence occurred through the Project Liaison Officer, including monthly and quarterly reports, milestone reports and general comments and questions. The Project Liaison Officer then sent this information to URS who produced reports for DAFF and for the pilot projects. Similarly, correspondence from DAFF and URS was transmitted via the Project Liaison Officer back to the pilot projects.

2. Pastoral EMS pilot project experiences with the national program

The experiences of this pilot project with the National EMS Pilot Program are presented below under the headings of benefits, limitations and interaction with other pilot projects.

2.1. Benefits

The main strength of the National EMS Pilot Program was its structure, in that it facilitated good and consistent communication with the pilot projects. This included the project liaison officers and URS that coordinated and managed the whole program. Given that there were some staff changes within DAFF during the three to four years of National Program operation, it proved beneficial to have a more stable external organisation responsible for communication with pilot projects. The URS staff of Andrew Thomson, Martin Andrews, Tim Jarvis, Bruce Howard and Shane Boladeras, and the Project Liaison Officer Matt Ahern, remained in their roles throughout the program. This ensured that they had knowledge and experience of the entire program and projects, and that they were able to build better relationships with staff from the pilot projects.

The project liaison officer, Matt Ahern, provided our pilot project with an identifiable, available person that was locally based. Matt also had very good experience and networks within the pastoral industry, being the industry that our pilot project was working with. All of this was beneficial to our project.

The Project Liaison Officer and URS also developed very good knowledge of the other 15 pilot projects over the course of the program. This enabled them to provide our pilot project with contacts from other projects that could help us with specific issues. These are noted below under the heading of interaction with other pilot projects (Section 2.3).

The National EMS Pilot Program provided further opportunities for communication through a dedicated web site, newsletter and annual forums. The website provided information on EMS generally and specific information on other pilot projects, including contact details. Our pilot project accessed documents placed on the website by other pilot projects, and we placed a number of documents on the website for the information of others.

The newsletter also provided information on the activities of other pilot projects and about related activities within agriculture generally. Newsletters from other pilot projects, such as the Mt Lofty EMS pilot, promoted our project to prepare and send out a similar newsletter to our participating producers.

The annual EMS forums provided our pilot project team members with an opportunity to meet personally with staff from other pilot projects and from a range of agricultural industry organisations. The forums provided our project with information on a wide range of topics and the names of people that could help our project access this information. Also, the smaller northern pilot project meetings provided similar benefits.

The monthly and quarterly reporting also provided benefits for our project. This reporting structure enabled the pilot pastoral project to raise questions that were then responded to by the Project Liaison Officer or someone from URS. Our monthly and quarterly reports also provided our project with a record of activities that was used when preparing the final project report. The feedback reports from the Liaison Officer also provided our project with information on the activities and progress of other pilot projects.

Overall, the National EMS Pilot Program provided our pilot project with the resources needed to be successful. To begin with, the level of funding provided was that requested by our pilot project in the original project submission. During the term of our project, staff working in the National EMS Pilot Program remained flexible with regard to their interpretation of project milestones and associated budgets, and were always willing to consider and approve requests for revision of milestones. In short, the National EMS Pilot Program gave our project every opportunity to be successful.

2.2. Limitations

Perhaps the biggest limitation of the National EMS Pilot Program was its failure to engender effective working relationships between the pilot projects. While this is a very difficult goal to achieve, with failure due to a range of reasons, the structure and processes of the annual EMS forums were contributing factors. Discussion topics at the annual forums were mostly general in nature, and consequently little time was spent learning about and discussing the specific activities of individual pilot projects. Furthermore, it seemed that considerable time at forums was spent on political and public relations activities, involving senior people from the Australian Government and a wide range of agricultural industry organisations. This encouraged some projects to be more politically active or motivated than others, resulting in tensions and divisions between pilot projects. In a number of ways the annual forums provided a competitive environment for the pilot projects.

Other limitations associated with the annual EMS Forums were:

- not all pilot project staff attended them, particularly on-ground staff whom we could have learnt a lot from as they were dealing directly with producers;
- they were not really designed for interaction between the staff of pilot projects; and
- there was a lack of presentations by pilot project staff.

For these reasons the pilot projects did not bond with each other or work as a team. To achieve this it would have been necessary to have held forums that were attended only by staff from the pilot projects, and to focus entirely on their activities. There is little doubt that the staff of pilot projects were highly committed to EMS development and implementation within agriculture, and would have been willing to work together for this common goal if the right working environment was provided. For example, hearing about the common challenges faced by other projects from the staff that were dealing with these, discussing these challenges and providing advice on how to address them, is likely to have resulted in more cooperation and collaboration between pilot projects. Instead, we ended up knowing little about the on-ground activities of individual pilot projects, and we did not bond with the staff from these projects.

While public relations and political issues are important and must be addressed, it would have been good to have separated these from the deliberations of pilot projects. Some attempt was made to do this at the forums by providing time for the pilot project staff to be alone, but the presence of higher level government and industry agendas still took precedence. It seems that separate dedicated pilot project forums, concerned only with EMS development and implementation, were needed to generate a higher level of understanding and interaction of pilot projects.

The DAFF EMS website may have been more effective as a communication facility if the pilot projects had bonded and worked together more as a team. A lack of common goals, limited experience with staff from other projects, and limited understanding of the other projects, were all reasons why projects made little use of the EMS website. Overall, pilot project staff were not motivated to use the website for communication with other pilot projects, and therefore making the time to utilise the site became a chore.

Another significant limitation of the National EMS Pilot Program was the absence of a plan for facilitating on-going EMS implementation after the Program ended in mid 2006. Producers that wanted to continue with EMS after the projects finish will mostly find that they no longer have access to staff or networks that can assist them. While the EMS Pathways Program may help with this to some extent, this is only useful for those pilot projects and associated producers that worked closely with their relevant industry organisations. In our case, relevant industry bodies have shown little interest in EMS during most of the National EMS Pilot Program, and consequently have not been involved with this pilot project. While Meat and Livestock Australia and Australian Wool Innovation are now participating in the EMS Pathways program, this occurred late in the EMS Pilot Program. Therefore, there was little to no interaction between this pilot project and related industry organisations, leaving participating pastoral producers with no on-going assistance.

In some instances, particularly near the end of the National EMS Pilot Program, the provision of documents by URS to our pilot project was not timely. The benefit-cost questionnaire arrived relatively late, and then URS were slow to respond to our questions on the interpretation of questions, delaying commencement of the survey. When the survey had been

implemented and results returned to us by URS, it again took some time for URS to respond to our questions and requests for assistance. In relation to our final project report, it would have been useful to have been provided with the URS reports on the National EMS Pilot Program benefit-cost evaluation and on the review of EMS design so that we could have compared our findings with those across the Program. This may not have been entirely the fault of URS, as some pilot projects were slow in providing them with information needed for these reports. Given all of this, it seems that all pilot projects should have had strict milestones for the delivery of the benefit-cost evaluation data and EMS design data well before the end of the National EMS Pilot Program.

2.3. Interaction with other projects

Given the comments above about the relatively poor level of inter-pilot project interaction that occurred during the National EMS Pilot Program, it is not surprising that we have little to report on this topic. However, while saying this, all interactions with other pilot projects were enjoyable and useful.

At the commencement of the National EMS Pilot Program a number of staff from our pilot project attended an EMS training meeting and workshop arranged by Genevieve Carruthers. This was also attended by staff of several other pilot projects. This proved very beneficial for staff in our project that had little to no EMS experience at that time. It also resulted in the development of relationships with other pilot project staff that carried through to the end of the Program. In particular, Genevieve Carruthers continued to provide good advice to our project over the course of the National EMS Pilot Program.

Other Program meetings, such as the annual EMS Forums and the northern pilots meetings provided limited opportunities for interaction. The annual forums were attended by a large number of people, with many of them not seeming to be closely involved in the on-ground implementation of EMS, and the short duration (less than a day) of the northern pilot meetings meant that people spent little time getting to know each other.

Useful interaction with other pilot projects also occurred while we were planning and conducting our end-of-project benefit-cost evaluation. We contacted people from two other pilot projects who provided good advice by phone, and who sent us useful documents. There was also considerable interaction with URS during this phase of our project, providing us with good advice and information.

Finally, our pilot project also communicated on numerous occasions with the Gippsbeef and King Island pilot projects on the topic of market research and marketing trials. Discussions with staff of these projects and documents exchanged helped us with this component of our project.