

2. Methodology

2.1 Choosing case study participants

Australian and New Zealand farmers recognised as leaders in environmental management on their farms were targeted as participants in this study. They were identified by recommendations from farmer and industry groups, state agricultural, resource conservation and regulatory agency staff, certification companies, and by publicity about some of the farmers who had won environmental awards. Other areas of interest in selecting potential candidates were farm businesses making use of environmental labelling or marketing, and those who were selling into known ‘environmentally sensitive’ markets.

Criteria for inclusion in the study included the ability of the participants to demonstrate commitment to improving environmental outcomes associated with their farming activities, recognition of the environmental outcomes being achieved on the farm, and willingness to take part in the project. Some participants in the study were using the ISO 14001 Standard to guide their management, but many had never heard of the Standard. All participants had gone beyond the development of a farm plan and were actively engaged in addressing environmental issues on their farms and in their businesses.

Over 70 potential candidates were identified by this peer recommendation process and were initially interviewed by telephone to assess:

- whether or not they were using some form of farm plan
- the issues addressed in that plan
- environmental issues facing the farm
- potential and actual impacts of farming operations on the environment
- how these impacts had been recognised
- whether there was a formal environmental policy statement (either written or verbal)
- what monitoring was being undertaken to assess progress towards the stated goals
- how such monitoring was being used in decision-making
- whether the interviewee or farm staff members were involved in any farming, industry or research groups.

From the initial pool of candidates, 40 were selected for a process of interviews and case study story development. Final participants were selected on a number of criteria, including:

- their ability to clearly articulate, or provide a written version of a management (or environmental) policy for their business
- the degree to which they were applying a ‘systems process’ to their farm management

- the application of an assessment ‘process’ to identify environmental issues of concern (both on-farm and in the local area)
- the use of monitoring to assess progress towards goals
- the use of some form of review process to evaluate progress
- their willingness to participate in the study
- location
- size of enterprise
- their availability for interview
- the level of development of their environmental management system or program
- the range of enterprises pursued.

Of these, 35 farms were in Australia and 5 in New Zealand. These 40 farmers were divided into two groups in this study. Twenty-three farmers were using a variety of non-formal approaches to resource management on-farm that did not include all elements regarded as ‘systems’ elements (called the Environmental Management Program or EMP group in this report) and 17 were using an environmental management systems approach (the EMS group). Of this latter group, 16 farmers were utilising ISO 14001 (although not all had proceeded through to certification), while the other farm was generally following the principles of this Standard through a customised ‘in-house’ process. Mech and Young (2001) included all approaches under the umbrella term of VEMAs – voluntary environmental management arrangements. In addition, some participants were following organic or biodynamic production practices. (Since the interviews, four of the interviewed EMP farmers have indicated that they intend to pursue use of ISO 14001, two of the EMS farmers have discontinued certification, but kept their systems running, and three of the EMS farms have undertaken certification).

It should be noted that the final group of participants was not a reflection of the entire number of farm operations in Australia with an EMS in place. Since the commencement of the project, the Joint Accreditation Scheme of Australia and New Zealand, JASANZ, has launched a database listing businesses with a registered EMS. Examination of this database has revealed more farms with an EMS certified against the ISO 14001 Standard. Details of businesses operating certified systems who have registered with Standards Australia can be found at <http://www.jas-anz.com.au/homeframe.htm>.

2.2 Interviewing farmers and farm managers

Following the final selection of participants, a full interview process was undertaken. Interviewers undertook a one-day training session prior to conducting interviews, in order to standardise the approach to interviews and to provide some background information of EMS. A team of five NSW Agriculture staff conducted the interviews with farmers.

The interviewers visited the farms, and talked with as many as possible of the staff involved in the environmental management on-site. In addition to direct conversation, supporting materials such as environmental policies, monitoring and recording data,

and any eco-labelling or marketing/promotional materials were also reviewed. The full questionnaire used in the study has been provided as Appendix 1 to this report. Thus, interviews were conducted in a semi-structured method (Denzin 1978), using an open questioning method with opportunity for participants to expand or add to questions and responses as they wished. The interviews were transcribed, with transcriptions approved by the participants. Case study stories have been previously published (Carruthers 2003b).

Lower-income participants were compensated for their time in taking part in the study.

The interviews aimed to determine the motivations that had driven the managers to adopt more formalised approaches to environmental management. Questions addressed the following issues:

- farm description, location, and history
- climate
- sources of income and mix of enterprises
- training and experience of the managers and staff (if any)
- environmental issues covered in the farm plan
- motivations for change – both from original goals and as a result of particular pressures/drivers
- management changes applied and the methods used to do so
- others management approaches being applied
- sources of information used
- indicators and monitoring used to assess change
- communication
- benefits and costs of changes to management
- marketing (if any) of changes made
- support and involvement of other parties in making changes on-farm
- perceptions regarding the role of government, industry and the community
- confidence in management
- perceptions on the future direction of management.

The two groups of farmers differed in the perspective from which they responded to the questions asked. The EMP group tended to combine information about both their environmental work and any quality assurance programs in their answers, rather than splitting the information provided. The EMS group, on the other hand, more commonly answered questions in the overall context of their EMS alone. This has created some subtle differences in the way the farmers approached and answered the questions, and needs to be considered when reviewing their responses.

In some cases, participants requested the non-disclosure of certain financial information, a wish that has been respected in the information presented here. Data from the interviews have been compiled, and this report discusses key messages, similarities, and differences in data arising from the interviews. Where appropriate, responses have been grouped.

A compilation of existing best management practices was also undertaken as part of this study. A wide range of government agencies, non-government organisations, universities and research and development organisations from across Australia were contacted and asked to provide information about any publications they produce that had a major focus on improving environmental management of agricultural industries. Additional publications for potential inclusions were also identified through searches of the web sites and publication lists of targeted organisations, in particular the department of agriculture or equivalent in each state, CSIRO and research and development organisations. Searches were also made of the catalogues of selected libraries, including NSW Agriculture and University of Sydney, and of the Australian Agricultural Research in Progress (AARIP) database. Appendix 2 more fully describes the process undertaken to collate available best management practice and code of practice documents, and contains the collation on a state-by-state basis