

# Uptake of ALMS Environmental Management Systems by Queensland Murray–Darling farmers: benchmarking socio-economic drivers



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## Overview

This project aimed to build shared socio-economic and environmental perspectives resulting in practical on-ground cooperation between agricultural property owners and natural resource management authorities.

The Queensland Murray–Darling Basin Commission (QMDC) is developing environmental management systems (EMS) as a key mechanism to achieved improved natural resource management by landholders. QMDC plans to support landholders to develop environmental management systems via sub-catchment planning groups.

Quantitative research undertaken for QMDC indicates that age, property size, debt levels, and off-farm income have no causal links to the uptake of NRM practices. A healthy on-farm income was found to be a necessary but not sufficient condition for the uptake of NRM practices.

The research findings suggest that the drivers of NRM uptake are social in nature, including values, confidence in NRM practices, and participation in property planning and Landcare groups. The environmental management systems uptake project aimed to build on these insights by probing the influence of social networks on the adoption of NRM practices.

‘An environmental management system (EMS) is an ongoing cycle of planning, implementing, reviewing and improving the actions that a business undertakes to meet both its own desired and externally regulated environmental obligations and aspirations.’ (Carruthers, 2005).

## Conceptual and theoretical foundations

This study took as its starting point a Bureau of Rural Sciences survey of the influence of socio-economic characteristics on the uptake of NRM practices by agricultural landholders in the Queensland Murray–Darling Catchment (Byron, Curtis, and MacKay, 2004).

This research indicated that age, property size, debt levels and off-farm income have no causal links to the uptake of NRM practises. The data suggest that the drivers of NRM uptake are social in nature, and include landholders’ values, their confidence in the effectiveness and practicality of NRM practices, and participation in property planning, Landcare, and other environmental programs (Byron, Curtis and MacKay 2004). This quantitative research thus pointed to (but did not characterise) the strong influence of social networks on the adoption and diffusion of environmental practices.

This SE03 project was underpinned by adoption and diffusion theory as extended by Vanclay and Lawrence (1995) to include social infrastructure and farming subcultures and styles, as well as complexity, divisibility, congruence, flexibility, economics, implementation costs, and relative advantage (Rogers, 1995).

The question was: how do the attributes of Environmental Management Systems condition the likely adoption and diffusion of this farm enterprise management approach?

The project drew on the developing debate on the ability of environmental management

systems to reconcile agricultural production with ecological goals (Mech, Lowe and Cole, 2003; National Conferences on EMS in Agriculture, 2003 and 2005; Ridley, Paramore and Seymour, 2003).

More generally, the research drew on and contributed to the emergent literature on environmental governance. The uptake and diffusion of NRM practises raises questions regarding how regional administrative arrangements for furthering NRM goals can best be embedded into a dynamic regulatory and socio-economic environment (Lee, 2004).

## Methodology

In-depth interviews were conducted with the six contracted Queensland Murray–Darling Basin Commission Landcare officers to analyse their insights concerning the drivers and barriers to EMS uptake. A follow-up email questionnaire surveyed eight Landcare officers to benchmark the number, composition, and dynamics of QMDC farmer groups.

Within the farmer groups, semi-structured interviews were conducted with ten landholders already using an environmental management system,, and nineteen landholders who are not currently using one,.

Of the ten EMS interviewees, three were members of the Traprock Woolgrowers Group and were using a customised environmental management system (called the Traprock Integrated Management System or TIMS), and seven were undertaking the Australian Land Management EMS in a Queensland Murray–Darling Basin Commission funded pilot group. This information was collected to inform the third stage of research, a survey of the members of the fifty QMDC farmer groups regarding environmental management systems.

These data are available as a benchmark for the Queensland Murray–Darling Basin Commission's reference in the evaluation of the effectiveness of its programs and incentive schemes. The methodologies developed: interview protocols, email questionnaire and landholder survey instrument are available to refine and re-use in longitudinal studies.

## Project findings and implications

### Stage 1: Landcare coordinator interviews

Landcare coordinators fulfil a mediating role between QMDC and the farming communities in the catchment. The NRM plan targets, sub-catchment planning, and coordinator positions are well integrated.

The extensive use of QMDC technical staff is successful, allowing Landcare coordinators to facilitate the integration of scientific ecological knowledge with local farming knowledge. However, the temporary appointment of Landcare coordinator staff creates difficulties in maintaining knowledge regarding farmer groups.

The farmer groups are highly varied and the group formation process is complex. The diversity of these groups makes the local knowledge of the Landcare coordinators crucial to fitting QMDC policy objectives with the needs and interests of particular groups.

The coordinators' experience of landholder perceptions of environmental management systems agrees with the Australian EMS literature; that regulatory pressure is a strong motivation for adoption of environmental management systems. They support systems that are targeted at industry sectors, and streamlined using existing industry reporting practices. They comment that there is poor understanding of environmental management systems in the region, and that more information is needed.

### Stage 2: EMS and non-EMS landholder interviews

Most interviewees (26) acknowledged the importance of sustainable natural resource management for the achievement of production goals; prioritising water retention, soil health,

erosion control, increasing fencing and watering points, and fencing for pasture management. The main factors nominated by the respondents as barriers to achieving their production and NRM aspirations were:

- regulation of vegetation and water by the Queensland Government (14)
- drought (12)
- limited finances (9)
- labour shortages and rural decline (7).

Coercive natural resource protection legislation has clearly alienated landholders. Economic realities limit NRM aspirations for properties, in the short term. Telling statements made by some interviewees indicated that these barriers are stressful and impact upon their ability to respond in a proactive manner to change.

However, four interviewees had found farm development opportunities through strategic, forward-looking investment and management decisions. Some indication of the reasons why only a minority of respondents reported successful use of opportunities may be found in their employment of formal planning processes.

Although nineteen interviewees discussed, seventeen interviewees had thought about, and six informants had a broad plan in mind, only one interviewee had implemented part of a succession strategy. However, of the nineteen interviewees who discussed property planning, thirteen had a property plan, as a result of QMDC sub-catchment planning.

Twenty-eight interviewees had internet access and used a computer as a routine part of running their enterprise. However, there is a range in the comfort of use and the majority utilise slow dial-up access. Some interviewees indicated gender was a significant variable in computer use.

All of the interviewees were approached on the basis of their membership in QMDC farmer groups. The significance of group membership, in terms of landholder capacity to deal with change, is that twelve of the twenty-nine interviewees nominated and spoke at length about the importance of learning through group processes.

The advantages of group processes were nominated as:

- sharing knowledge
- accessing information and expertise
- excellent facilitation
- networking with people with a common interest in NRM
- accessing subsidies for NRM works
- comparing, benchmarking and learning from 'looking beyond the farm boundary'.

Twenty-three interviewees were aware of both the existence of QMDC and had some knowledge of their role as an NRM regional body. Sixteen interviewees were supportive of QMDC and their role as an NRM regional body, while eleven informants commented that QMDC is 'top heavy' bureaucratic, indicating that landholder attitudes towards QMDC are ambivalent.

Two interviewees had 'no knowledge of EMS' and seven interviewees stated that they had 'limited knowledge of EMS'. Twenty interviewees had heard about EMS through Landcare or QMDC.

Nine respondents made comments about the complex nature of EMS, auditing requirements, the paper work, and the time associated with implementing an EMS.

Twenty respondents expressed concerns about a range of costs that would be incurred through adopting EMS. The major concerns related to costs associated with recording keeping, the time required to develop and implement an EMS, auditing requirements, and capital expenditure.

However, the three landholders involved in the development of the Traprock Integrated

Management System (TIMS—an environmental system developed by the Traprock Wool Association for its members) believed that development of a local EMS lessened its complexity. Traprock Wool Association (TWA) members highlighted the level of control they had maintained over an EMS process through the development of TIMS.

Five respondents suggested that an EMS was incompatible with their enterprises, nine respondents highlighted ways in which EMS could be implemented, and five saw EMS as both compatible and incompatible with their enterprises. Eight respondents were unconvinced there was any economic benefits from adoption of EMS, five of whom were implementing EMS. Six interviewees believed landholders in general will not invest in EMS until a premium results. Four interviewees believe EMS is a worthwhile means of constructing a market niche. Four interviewees pointed out that there is currently no way of communicating a producer's NRM ethic to consumers, and no proposed methodology for doing so.

The major advantage of EMS, identified by six respondents, is that it can improve management and business efficiency. Equally important as a potential advantage was the ability of EMS to help with demonstrating environmental credentials to governments. Seven respondents identified the ability for EMS to be integrated with catchment priorities as a potential advantage; and the integration of production and biodiversity, and the achievement of environmental outcomes as advantages. Two comments were made that leaseholders would be better motivated than freeholders to undertake an EMS, because of concern about lease renewal.

Four Australian Landcare Management System pilot group respondents highlighted the significance of having one-on-one support and training through Landcare and the sub-catchment groups for EMS adopters. The major sources of support for the TWA members included: TWA, QMDC, Landcare, the NSW Department of Agriculture, and funding from Farmbiz.

Of the eleven comments made in response to the question of whether and what kind of incentives they thought would assist the uptake of EMS, three informants nominated facilitated group work as the most useful form of incentive. A TIMS informant nominated government assistance in marketing products produced in an environmentally responsible manner as the most helpful form of incentive. Five interviewees were in favour of incentives to promote the uptake of EMS. However, two interviewees were concerned that monetary help could turn into a 'Trojan horse' for more government interference in how landholders run their properties.

These data suggest that there is considerable resistance to the notion of EMS among Queensland Murray–Darling landholders, despite the fact that it may form a valuable management tool for agricultural enterprises. There are, however, several attractions QMDC could reinforce; including the use of EMS to reduce regulatory pressure, group support for EMS implementation, and QMDC support to use EMS to badge commodities.

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