

BestFarms — An Integrated Approach to Environmentally Sustainable Farming

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ABSTRACT

Active Landcare communities such as the example in the Blackwood Basin in the South West of Western Australia are continually searching for methods that better integrate environmental and economic sustainability at both the farm and catchment / regional scales. The Blackwood's pilot Environmental Management System project has been developed as a tool to communicate between the wider community, as represented by catchment and regional planning processes and farm managers. This project explores the use of a management system in integrating community and land manager objectives and values related to sustainable agriculture. Recognising this system through certification may help to endorse and validate farmer's efforts towards sustainability. Importantly, the management system approach provides a communication tool between landcare communities at different scales and potentially to consumers. Incorporated into the project is a participatory research project, which explores the values and attitudes, related to environmental certification.

INTRODUCTION

Degradation of natural ecosystems through current land use practices

Whilst many of our serious natural resource management issues have historical causes, there is little question that many of our current production systems are further degrading the environmental resource base (Williams and Saunders 2002). In the farmland dominated wheatbelt of Western Australia there are some 50 species that are critically endangered and salinity affected areas are expected to increase from 2 million ha to 6 million ha in the next 100 years under the current do-nothing scenario (George & Short, 2002). Societies call for commercial land uses that are benign is becoming louder. Significant research and effort has been directed at defining land use practices that do not cause further damage to the environment but for a myriad of reasons, conventional practices dominate.



At the international and national scales, there is a desire for a shift in production practices that reduce impacts on ecosystem processes and reduce species losses at the same time as generating farm income. Williams and Saunders (2002) comment that the effects of unsustainable land management practices are "...enduring, not easily reversed, and are becoming increasingly expensive to correct"

- They go on to qualify that this damage has:
- reduced the productive capacity of lands (although in some areas productive capacity has increased);
- adversely impacted on water quality and biological diversity;
- put agricultural trade at risk through contamination and failure to demonstrate production systems that do not damage the environment; and
- threatened health.

(Williams and Saunders, 2002)

Environmental management systems

Environmental management systems or Voluntary environmental management arrangements (VEMAs) are defined by Mech and Young (2001) as

".. a diverse range of arrangements in which firms and in some cases other organisational structures , may voluntarily choose to participate for the purposes of enhancing environmental management. (This includes) many very different arrangements and production protocols that may or may not be part of environmental certification or labelling schemes"

The use of a formalised auditable procedure to formulate and test farming systems that are more benign has been used by a variety of farming, non-government and ethically-based organisations around the world. The aspect of EMS that is attracting many sustainable land management focused organizations to investigate it is the promise of combining commercial operations and improved environmental management on farm, possibly to the benefit of both.

The BestFarms project

The Blackwood Basin Group (BBG) is a not-for-profit organisation dedicated to providing positive and practical solutions to the environmental challenges the community is facing. The Group has established a new (Environmental Management System) EMS framework called BestFarms (Blackwood Environmental Systems Trial Farms), which will assist landowners to manage their properties better for the benefit of the local environment. The BestFarms system recognises that farming should be profitable and recognises the importance of balancing the need to meet environmental sustainability objectives with the ability to provide economic growth. BestFarms aims to provide landowners with an opportunity to improve management of natural resources and capture market and consumer recognition for this effort. The BestFarms system is likely to provide an opportunity to differentiate food products from the Blackwood Catchment as a collaborative project between the BBG and landholders.

The pilot phase of this project has been supported by the Natural Heritage Trust's National EMS Pilot Program. This project is one of 15 EMS pilots occurring across Australia. During this pilot phase the Blackwood Basin Group will work with local zone committees, Landcare groups, farmers, industry groups and a range of other stakeholders to trial and improve the BestFarms system.

One of the questions for future exploration posed by the Natural Heritage Trust EMS Pilot Program that is being explored within the BestFarms project is –:

'Can EMS help land managers deal with numerous, often complex, and ever-changing management requirements that characterise primary production? There are numerous quality assurance schemes and legislative requirements, and many industries have packages to manage issues such as fertilisers or pesticides. Can these requirements be built into a single, stand-alone integrated process?'

National EMS Pilot Program outline, 2003

Landholders voluntarily choose to participate in BestFarms which offers a 10-staged approach towards EMS development on-farm. Activities such as identifying environmental impacts, setting objectives and targets and implementing environmental management practices are the focus of the BestFarms system. These elements are made easier with assistance tools and templates developed by the BBG, which significantly reduces the cost and time burden on individuals.

INTEGRATION CONTEXT

This project involves two areas of integration:

1. incorporating community knowledge into policy and management and
2. interdisciplinary research , which observes the process.

Incorporating community knowledge into policy and management:

The process has so far involved supporting individuals from twenty four farm enterprises through a process to develop an Environmental Management System for their farms. The project is ongoing and further workshops will be held throughout the year.

The approach is catchment based, developed specifically for this community as is explained later. The first round of participants attended workshops held in March 2004 where the management system and workbook were presented and explained to them. These first farms have agreed to pilot the project to allow for improvement for participants that will follow. Pilot participants will work closely with the project leaders and trained BestFarms facilitators (who are farmers or landcare coordinators).

Following the initial workshop, these people will receive support to develop their EMS over the next 3 months. When they are ready they will undertake a peer review of their EMS. If they choose to become BestFarms certified, they will undertake an annual peer review.

Other players in this project include the BestFarms management committee and staff, the parent group, the Blackwood Basin Group and the wider catchment and regional community that are observing the project.

The project is advised by information, networks and people that have been involved in the integrated catchment management process that has occurred in the Blackwood Basin over the past 14 years. The cultural setting is the rural agricultural community, typical of much of Australia, with an aging farming community and severe economic, social and environmental pressures on the community. Major environmental issues include in order of priority, severe land and water salinity issues, soil fertility decline and biodiversity decline.

Knowledge networks are transforming from landcare groups based on shire boundaries to landcare zone committees based on subcatchment boundaries as a result of the BBG's zone initiative. Relatively well resourced in terms of landcare, over the past decade, there has been a sense of slow-down and disillusionment over the last two years since regional planning and the consequential emphasis on planning (office based) rather than action (community/ land based).

A consistent call from the community has been to develop options that combine profitability and sustainability. Also, a consistent call as a result of the immeasurable nature of the Decade of Landcare funding, is for greater accountability for NRM expenditures.

BestFarms is an operational structure which aims to integrate the complexity of social, environmental and economic issues that are affecting the community of the Blackwood.

Interdisciplinary research

Tracking with the development and implementation of the project is a PhD study that focuses on the attitudinal drivers of environmental certification in the Blackwood. The title is *Assessing socio-economic and cultural drivers advancing and impeding environmental certification in the Blackwood Basin, SW Australia*.

The principle objective of this study is to determine the role of attitudes, values and beliefs in driving the development of environmental management systems in Australia. The study will focus on attitudinal influences on products of farming from production to consumption, considering influences that occur throughout that cycle.

Specific objectives are to:

- Provide insights into the socio-cultural influences on the implementation of ethical farming practice.
- Develop a conceptual model for engaging landholders and consumers in the ethical production movement.
- Identify production to consumption systems that have the potential to assist in addressing ecological and social issues in the Blackwood
- Inform ongoing environmental management system programs and policy development.

After Courville (2001) who uses *production-to-consumption systems* as the main unit of analysis, the study will involve assessment of environmental and social issues associated with the cycle of production from growing to consumption. Courville(2001) describes the production -to-consumption system as a “..hybrid of designed physical systems and human activity systems based in and limited by natural systems”.

The life cycle of a number of farm products and the socio-economic influences on those products will be examined. Key to the methods used in this research is a systems approach that recognizes the interdependence of social, ecological, economic, psychological and behavioral aspects of sustainability in the context of an environmental accreditation framework. The methodology also involves the recognition of the evolving, community based approach that is being observed.

METHODS OF INTEGRATION

Areas of integration

The BestFarms project aims to combine profitability and sustainability, integrating a range of tools and processes from landcare, agricultural best practice, quality assurance and management systems approaches.

The BestFarms project integrates the following concepts, policies, resources and processes:

- Landcare/ Natural Resource Management
 - Regional and catchment strategies
 - Landcare coordinator support frameworks
 - Landcare technical information
 - Best Management Practices
 - Landcare networks
 - Environmental monitoring
- Industry—conventional and organic agriculture
 - Industry codes of practice
 - Principles of farm profitability
 - Principles of farm productivity
 - Energy efficiency
 - Other quality assurance schemes
 - Biological Farming Systems
 - Integrated Pest Management

- International/National policy directions
 - International environmentally sustainable charters (eg EUREPGAP)
 - National EMS Framework
- Social
 - Consumer demand for environmentally friendly produce
 - City-Country / Consumer-Producer relationship building
 - Networking
 - Capacity Building
 - Rural sustainability
 - Sharing knowledge
 - Training and education
 - Employment
- Attitudes, beliefs and values
 - Ecological values
 - Human Ecology (health)
 - Personal values
 - Community values
 - Consumer values
 - Artistic expression (the BestFarms project uses local musicians and artists in its promotion)

Areas of integration that are a major focus for this project are explored in more detail below.

Integrating regional NRM plan priorities with farm action plan priorities

Alexandra (1999) notes that we are opting for a cooperative and educational approach to addressing environmental issues rather than hard regulation. He goes on to pose the question, can enterprise based environmental management systems be connected to regional NRM strategies or local action plans? These plans which vary greatly in their content, rarely suggest mechanisms by which they can be implemented and are often not linked to maintaining farm income. Profitability has been recognized as an important factor in maintaining landcare activity with over half of Blackwood farmers surveyed in 2001 saying that profitability directly affected their ability to undertake landcare activities (BBG, 2001).

BestFarms focuses on the role of environmental management systems in a regional context, using the environmental priorities identified in the South West Regional Strategy particularly focusing on priorities of the Blackwood sub-region. The environmental review component of the BestFarms EMS process involves identification

of relevant environmental impacts to be addressed. Working off a Master Environmental Management Plan template, where all catchment issues are listed in order of their catchment priority, each landholder undertakes an environmental risk analysis for their property, keeping catchment goals in mind. This method is used as a means of transferring catchment goals to a smaller farm scale.

This process ensures that landholders are influenced in their prioritization by the prioritization that has occurred at catchment scale, by the catchment community.

Regional and farm objectives are integrated through the relationship between the South West Strategy and the farm action plan. The language of regional strategies is transformed to the language of environmental management systems, more applicable to implementation at the farm level. Regional priorities and management action targets are used to develop objectives and environmental hazards in the Environmental Management Plan Template. This template is easily amendable and can be redrafted to reflect the priorities of different subregions or different sub-catchments. The Blackwood has 9 sub-catchments (zones) each with significantly different priorities due to the diverse nature of the catchment.

The lines of communication between region and farm will be managed by administration of the BestFarms project allowing a two-way communication between regional and farm objectives, activities and monitoring results. The central component of this communication system is the Environmental Management Plan template. This is demonstrated in the figure below.

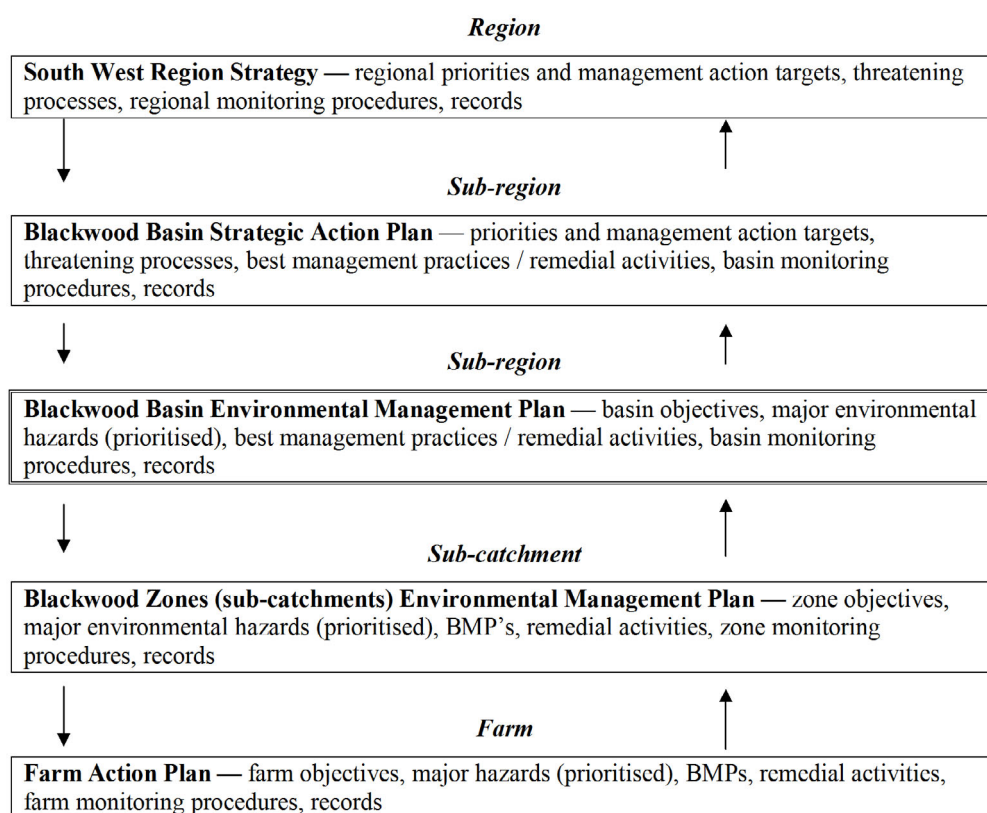


Figure 1. Integrating Regional and Farm objectives

The Environmental Management Plan is used as a template for use when developing a business or on farm EMS in the Blackwood. The Environmental Management Plan includes farming activities and the impacts associated including:

- Physical degradation of the natural resources
- Chemical pollution of natural resources
- Soil water imbalance
- Groundwater contamination
- Waterway contamination
- Loss of biodiversity
- Energy and resource use efficiency
- Waste Management
- Environmental public health issues

Land managers will incorporate those areas of the template that are relevant to their farm operations and environments. They will also be able to integrate the monitoring procedures and critical levels determined for the basin or regional scale. This would provide a driver for coordinated monitoring efforts that could be collated up to basin scale. The framework allows for information transfer and collation between scales as shown above.

Integrating producers values with consumer demand

Providing a link between producers who consider themselves environmentally sustainable and consumers who wish to purchase environmentally sustainable produce is an important aim of the BestFarms project. This will be done through an exploration of the concept that it is shared values that will provide the link between producers and consumers.

The PhD study—*Assessing socio-economic and cultural drivers advancing and impeding environmental certification in the Blackwood Basin, SW Australia* will consider the attitudes, beliefs and values that lead people to adopt a sustainable farming system or prefer to consume “sustainable” produce. Initial literature review (Stern and Dietz, 1994, Carr, R, Webb, T & Barr, N 2001, Gordy, 2002) and initial contact with ‘sustainable’ farmers and consumers indicates that people that seek to produce or consume environmentally friendly products have one or all of the following values, attitudes or beliefs.

1. Have an advanced understanding of the interdependency of ecological systems, including the role of humans within the biosphere and recognize a need for this approach in sustainable farming. Can be related to both a value system and a detailed knowledge of ecological processes.
2. Are concerned with perceived health risks of conventional farming
3. Have an altruistic worldview—i.e. have a value and belief system that goes beyond concern with the self or immediate human family, i.e. have values related to environmental justice (including animal welfare, workers rights)

4. Have a need for recognition for effort towards good practices
5. Have a perception that being recognized for good practice will bring financial or other rewards.

(Ecker, 2003)

The study involves following the supply chain of farmers involved in BestFarms and established certification schemes and assessing attitudes to environmental sustainability along the supply chain from producer to consumer. This will be compared to supply chains for the same products from producers who are not within a certification scheme.

Integrating profit making / cost saving methods with methods that are beneficial to the environment

The BestFarms project aims to integrate profitability and sustainability through three mechanisms discussed below.

Firstly and primarily, is the assessment of environmental impacts of production and identification of practices that will address these impacts. Producers are asked to develop a production flow chart for their operations that will demonstrate areas of potential impact and strategies to address these. Below is an example of the production flow and potential impacts as identified by one of the PhD case study farms.

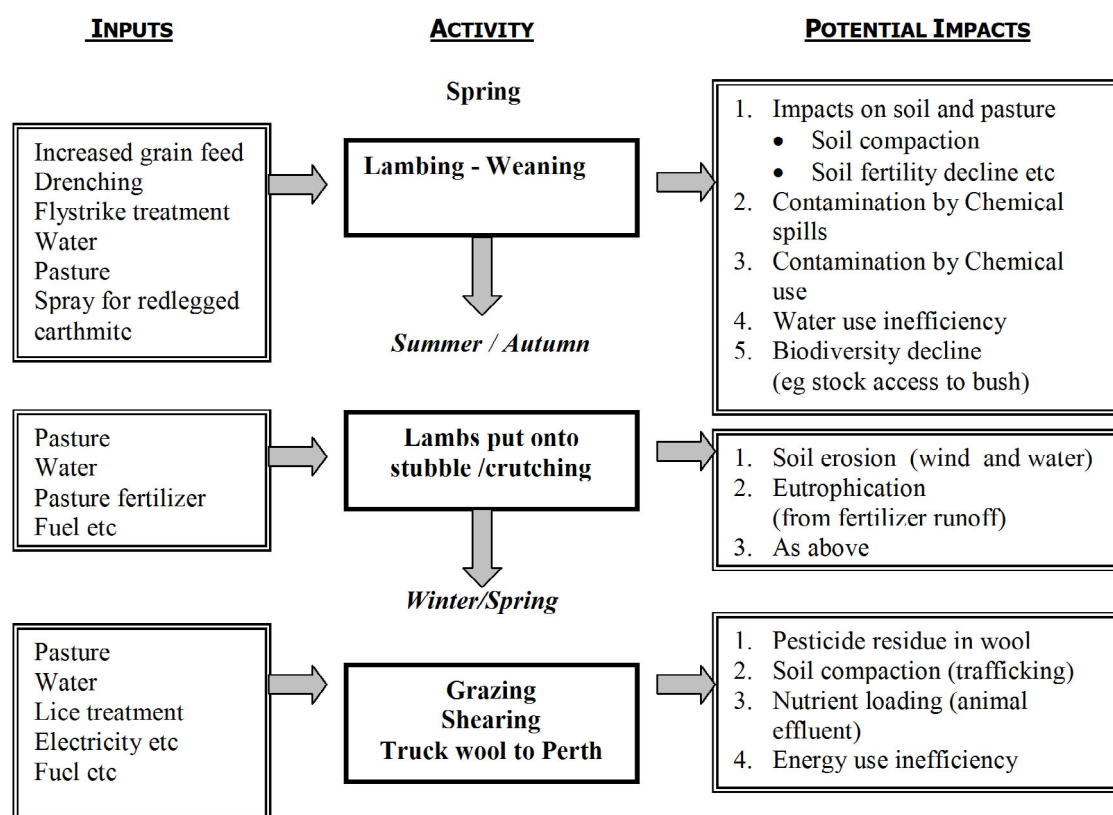


Figure 2. Abbreviated Production Flow and Impacts—Lamb to Wool

Dealing with these impacts before they become a serious issue should reduce costs in the longer term. The profitability of landcare is a debate that will not be explored here. The medium and long term financial benefits of improved environmental management are well documented and demonstrated, despite the initial outlays.

Secondly, the process also facilitates consideration of resource and energy efficiencies within the production process. This is expected to promote consolidation of farm activities by better attention to current operations. There is also the potential for reduced farm costs resulting from reduced input costs and improved waste management. An example of this identified by one participant is water harvesting which results in less use of rural water supplies and decreased recharge in salinity risk areas.

Thirdly, the process has the potential to allow market advantage for efforts towards environmental sustainability. Better market access and interpretation of market opportunities will be explored through the BestFarms Program. There is the opportunity to add value through product differentiation with produce grown under BestFarms certification able to take advantage of market opportunities for environmentally certified products. Even without the benefits of certification, there are some participants that believe that buyers of their produce will recognize and appreciate documentation of efforts towards environmental sustainability. Ultimately, consumer trust and confidence may be increased regarding produce from this area due to our ability to demonstrate accountable farming practices amongst farmers involved in the program. Another potential financial benefit is increased property values due to improved environmental condition.

IN SUMMARY

This project whilst relatively small in terms of the numbers of farms involved at this stage, has an expansive approach, revealing a limitless nature at this stage. There are many facets of environmental, social and economic elements involved in this project.

Basically the project involves developing a management system that can integrate all the facets identified for encouraging a sustainable farming community. This is then shared with land managers who can tailor this to their needs.

The management system is a tool only and it is the communication networks and support system that it is embedded in which will influence the ultimate success of the project.

As an attempt at an integrated project, the interdependent and interconnected nature of the project is becoming apparent to those involved in delivering and participating in the project. Ideally the management system approach that the process is built on, will be used to manage the complexities of the project in the same way that land managers are coached to manage the environmental complexities of their farms.

A better understanding of what is motivating people to get involved in EMS and environmental certification, as a result of the participatory research project is likely to assist in being able to set up improved support systems.

It is anticipated that the extensive monitoring and evaluation procedures developed for the National EMS Pilot Projects combined with the research on attitudinal drivers will be able to demonstrate whether this methodology is able to meaningfully integrate the diverse and complex array of issues involved.

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