SUSTAINABLE AGRICULTURE - USING BEST PRACTICE TO MANAGE THE PARADOXES FACING LAND MANAGERS AND AGRONOMISTS

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Abstract

Whilst the concept of sustainable agriculture is now widely recognised as a desirable objective, achieving it in reality has a long way to go. We argue that both sustainable agriculture and best practice are processes that need to be understood and implemented. A sustainable agriculture framework developed by the authors provides the essential basis on which the extension of best practice to agriculture might be attempted in Australia. Given their role in the information exchange process, agronomists should play a pivotal role in these processes. The paradox is that many people involved in these issues view them not as processes, but as outcomes which they seek to measure and achieve. This has been a major contributing factor to the confusion surrounding these issues. Principles of best practice, which is essentially an externally focussed process of continuous improvement, have been successfully developed over the past 20 years in secondary and tertiary industries. The challenge is to extend these principles to agriculture: there is enormous interest not only in Australia, but throughout the developed world, in such a possibility.

Key words: Sustainable agriculture, best practice, land management, agronomy, benchmarks, paradox.

While the concept of sustainable agriculture is now commonly recognised as a desirable objective, achieving it in reality has a long way to go. From a two year study of the environmental impacts of the grains industries, Williams and Walcott (9) constructed a framework to describe the processes by which progress towards sustainable agriculture could be accelerated in Australia. It was based on an understanding of the roles and responsibilities of everyone who makes decisions that impact on the environment influencing agricultural production, and the problems and opportunities which this presented. It clarified how different people could organise themselves in order to improve the processes for sustaining agriculture.

The framework recognised that farmers make many decisions that result in environmental damage on their farms - what we have termed localised impacts. Soil acidification, changes in soil fertility and wind erosion are good examples of localised effects. Government and other agencies make decisions which affect the functioning of whole ecological and hydrological systems, and thus show up as environmental damage on farms. We have called these systemic environmental impacts - dryland salinity, loss of biodiversity and soil erosion are good examples. The key to understanding our framework for progressing sustainable agriculture relates to how decision makers manage localised and systemic impacts, and explicitly recognise whether they are dealing with causes or symptoms.

Paradoxes in sustainable agriculture

Today, we are surrounded by paradox - situations that seem absurd or contradictory but are often nonetheless true. Charles Handy (4), considers that managing paradox is the most significant issue emerging from the current turbulence of change. In managing paradox, the ability to recognise and identify problems and opportunities is essential; as is the need to organise ourselves and other people to do something about them, and the need to be able to reflect on what has happened in order that improvements can be made in the future. For Australia's resource managers (including farmers and the many people in local, state and Commonwealth agencies) these attributes should be central to their understanding of what constitutes sustainable agriculture and best practice.

The paradox facing farmers is that whilst the community has increasing expectations about reduced environmental damage, farmers are battling continually declin- ing terms of trade - the need to achieve

simultaneously better financial and environmental outcomes. We argue that this is achievable if a system of best practice management is adopted.

There is a paradox for non-farm land managers that in their search for measures (environmental indicators) of environmental outcomes, they often view sustainability as an end which they seek to measure and achieve. The reality is that sustainable agriculture and best practice are systems of interdependent processes that need to be understood and implemented, and not specified outcomes for which people aim. This has been a major contributing factor to the confusion surrounding these issues. The paradox for all people involved in decisions resulting in environmental damage on farms is that in this era of seeming data overload, there is often confusion concerning the information necessary to manage these impacts and implement sustainable processes. We have argued elsewhere (8) that there needs to be much clearer understanding of the specific information needed by different land use managers, and our framework provides the necessary structure to bring clarity to the issues.

Agronomists face differing paradoxes, depending on whether they are in the public or private sectors. The issue for public sector agronomists employed as extension officers is that historically they have been concerned with developing and providing advice to farmers to enable them to increase their productivity, and in the process deal with localised adverse environmental effects. Paradoxically, the community which funds them is more concerned about systemic environmental impacts, issues about which traditionally they have not involved themselves.

Conversely, private sector agronomists are faced with a situation in which their primary purpose is to provide information and products to farmers enabling them to achieve better financial outcomes, and yet paradoxically they must question whether they have a professional responsibility to become involved with systemic environmental impacts. They undoubtedly collect and assess information on systemic damage which may be more relevant to decision makers (*eg.* in local government, catchment managers, Landcare groups *etc*.) other than farmers. In this scenario, what is the appropriate role of private agronomists in the sustainable agriculture framework; do they have responsibilities to the wider community, and if so, how does this relate to the operation of their business?

Planning for sustainable agriculture

It is our basic contention that sustainable agriculture will be achieved only when appropriate plans are developed and implemented at the level of the farm, the local region, the catchment, the state and the nation; and when there is an effective two-way flow of relevant information between these levels.

Farm planning and management is essentially an exercise in the appropriate handling of risks associated with capital - human, financial and natural capital. At a national conference held in 1994 dealing with risk management in Australian agriculture (7), financial risk management dominated all the 21 invited papers - there was barely a mention of human or natural capital risk management. This reflected the ethos of time that farm planning and management as expressed in farm business plans dealt solely with financial issues. Things are beginning to change, with the expansion of Farm Business Plans to include whole Property Management Planning (PMP). The central concept of PMPs - that of holistic farm planning - is being adopted in Australia. It seeks to establish a planning process whereby farmers can sensibly implement a strategy that aims to achieve both improved environmental and financial outcomes. As such, PMPs attempt to deal with systemic as well as localised environmental impacts.

Cooperation between farmers and other land managers to implement local planning is essential if systemic environmental impacts are to be addressed effectively. In our previous paper (8), we argued that local government should be actively involved in this. However, the evidence suggests that the involvement of local governments in planning to manage systemic environmental damage is patchy at best, and the exceptions stand out. One of these is the Coorong District Council (2) in South Australia which has initiated the development of a Local Action Plan (LAP) for the District. A broadly based Steering Committee has constructed a plan for the Shire to address systemic environmental impacts identified in a Soil Conservation Board District Plan (2). They established a process whereby a draft LAP

was developed following appraisal of key information including:identification of the issues, their impacts and inter-relationships;

• identification and assessment of the causes of the problems;

• assessment of all treatment options;

• identification of priority treatment/actions and priority locations;

• quantification of the benefits and costs; and,

• determination of the roles and responsibilities of all stakeholders and the appropriate allocation of costs.

Even at this pre-implementation stage, the plan has empowered farmers to integrate regional information into their PMPs.

There is increasing recognition that where significant disturbances to hydrological systems have occurred, the causes need to be addressed and managed appropriately through the development and implementation of catchment management plans. In recent years in Australia, this has been viewed in the context of Integrated Catchment Management (ICM), which seeks to involve all stakeholders working in partnership. ICM was developed (6) on the basis that given the complexity of catchment processes, traditional approaches were not working. A recent appraisal by Masterson and Parker (6) of ICM in Australia found that after nearly ten years of implementation, there is still no successful model that embraces all ICM approaches.

Under the Australian constitution, the power to control the use and development of natural resources lies with the States and Territories (9). In carrying out this mandate, our paper (9) highlighted the large amount and variety of legislation under which persons in State and territory agencies make decisions which affect agricultural resource use and its environmental consequences. Masterson and Parker (5) describe how in Western Australia many government agencies were involved in ICM through an ICM Management Group. They concluded that during this process, developments needed to advance ICM were poorly understood and instead of creating new opportunities, they became significant barriers. Two major reasons for this were the contradictory statutory responsibilities of state government agencies and the uncoordinated nature of program and project development between agencies.

We contend that (9), whilst the Federal Government has no direct formal responsibility under the Constitution for issues related to the management of agricultural resources or its environmental consequences, a large number of decisions made by Commonwealth agencies affect these issues.

Best Practice

Escalating interest in sustainable agriculture over the past 10 years has spawned a lexicon of terms which seek to explain the recognition, identification, measurement, process and progress of sustainability. The literature is replete with material dealing with environmental indicators; hazard analysis and critical control path (HACCP) methodologies; environmental assessment; total quality management (TQM or International Standards Organisation Code 9000); environmental management systems (EMS); accreditation; environmental audit; continuous improvement; performance indicators; international standards for environmental management (ISO 14000); quality assurance (QA); cert- ification; best practice; and benchmarking. Ill-informed discussion about this diverse mixture of processes, measures, outcomes and standards seems to throw more heat than light on the issues. In seeking to accelerate progress towards sustainable agriculture in Australia, the authors have adopted the principles and practices associated with best practice and benchmarking.

Best practice recognises that in developing and implementing land use management plans, inevitably, some will be better than others. Principles of best practice, which is a process of continuous

improvement, have been successfully developed over the past 20 years in secondary and tertiary industries. There are four essential features which distinguish best practice from other activities surrounding sustainable agriculture. Firstly, it deals with processes and not outcomes - that is, people in benchmarking partnerships seek to identify the best outcome achieved in the partnership (the benchmark), and emulate the process that has resulted in this best outcome. Secondly, it deals with change, recognising that the best is likely to be continually changing. Thirdly, unlike the internal focus of most of the other initiatives, it recognises that best practice might not be in agriculture; might not even be in the same state, and might even be overseas. Finally, best practice requires an agreed framework for its successful implementation.

The challenge is to extend these principles to agriculture, and there is enormous interest not only in Australia, but throughout the developed world, in such a possibility (1). The sustainable agriculture framework provides the essential basis on which the extension of best practice to agriculture might be attempted in Australia. In implementing this framework, the two basic conditions outlined above in relation to planning and information transfer need to be fulfilled. A pilot implementation of best practice for sustainable agriculture in Tasmania is putting in place the first pre-condition relating to planning at each level. This paper and another (8) are starting to refine the second pre-condition - the information exchange process.

Conclusion

Masterson and Parker (5), in assessing the current state of integrated catchment management in Australia, recently concluded that there is a greater than ever need for a partnership process that treats land and water degradation as a social issue, provides for strategic planning and management, integration, community involvement and that establishes a framework for sustainability, at all systems scales.

This highlights the need for a framework for sustainability, which we have developed, and the application of best practice methodologies within that framework. It also highlights that the two-way linkages between the different spheres of interest are poorly developed. Given their role in the information exchange process, agronomists should play a pivotal role in these processes. Were they to do so, it would go a long way to meeting the needs articulated by Masterson and Parker, and in the process, more light would be shed on the many paradoxes facing the people involved. There is, clearly, however still a long way to go.

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