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## The New Zealand policy framework for sustainable agriculture and some implications for animal production research

A.B. WALKER, J.A. FRIZELLE AND S.D. MORRIS

MAF Policy, Ministry of Agriculture and Fisheries, P. O. Box 2526, Wellington, New Zealand.

### ABSTRACT

International environmental influences are becoming increasingly important to farm management decisions on New Zealand farms. New Zealand has been active in meeting international commitments in issues such as the UNCED Biodiversity Convention, the UN Framework Convention on Climate Change, and the Montreal Protocol on Ozone Depletion. New Zealand now needs to focus on the impacts of agriculture on the environment. This paper backgrounds recent policy developments in New Zealand leading up to the release of a Ministry of Agriculture and Fisheries position paper on sustainable agriculture. The position paper defines sustainable agriculture as having environmental, economic, social and market dimensions. MAF believes that new approaches will be needed to encourage farmers to adopt more sustainable farming systems. There are market opportunities presented by providing customers with assurances of the environmental quality of our products and the processes by which they are produced. There are also issues of resource degradation that must be addressed through standards under the Resource Management Act. The influence of these changes on farming practices in New Zealand is reviewed in this paper. Issues confronting farming systems researchers and animal production scientists wishing to contribute to sustainable agriculture in New Zealand are identified.

### INTRODUCTION

The last decade has witnessed significant growth internationally in environmental awareness and concern for global sustainability. For example, OECD activities in the last two years include the Lithuania Agriculture and Environment Conference, the Technology and the Environment Programme, A Review of Public Policies on the Protection of Soil Resources, Environmental Aspects of Biotechnology, Food Safety, Agriculture and Climate Change, and Environmentally Significant Farm Machinery, to name just a few.

In line with such trends New Zealand has been actively involved in establishing and meeting international commitments on issues such as biodiversity, climate change and ozone depletion.

It has become obvious that these developments are not an aberration, but are a significant turning point in international priorities. It is a trend that New Zealand, with its economic security tied to international trade, cannot ignore. The sustainability of farming systems and practices has come under international scrutiny, and are increasingly an issue in policy development, trade access and market positioning.

A recent report on New Zealand farmer opinions on the sustainability of on-farm practices (MAF 1993(a)) showed increasing concern amongst farmers for animal welfare issues (such as tail docking, drenching, transport of livestock, inductions and de-horning) and practices such as agrochemical use. Such developments have implications for animal production research. As farmers reassess previously acceptable farming practices they are looking for socially acceptable and financially viable alternatives which will fit within their whole farm system.

### POLICY DEVELOPMENT

Sustainable agriculture policies are now being developed in many overseas countries to address the environmental

aspects of agricultural production. The mechanisms for supporting European farmers are shifting from product price support to other forms of income support. There is also direct compensation for restraining production, and indirect support through payments for environmentally sustainable farming. Within the UK, for example, support includes subsidising conversion to organic farming systems, and programmes encouraging wildlife enhancement, countryside stewardship and habitat conservation in farm woodlands.

In New Zealand, Government policy on sustainable agriculture is now being addressed at two levels. At a central government level, under the umbrella of a national strategy for sustainable land management "Caring For Our Land", an inter-departmental standing committee is co-ordinating policy development among central government agencies with responsibilities for sustainable land management (Ministry of Agriculture and Fisheries, Ministry of Forestry, Department of Survey and Land Information, Department of Conservation, Ministry of Research, Science and Technology, Treasury and the Ministry for the Environment (chair)).

At a local level, regional councils are addressing resource use issues in their regional policy statements and plans through a combination of regulations and advocacy activities.

After a two year consultation process, MAF developed a sustainable agriculture policy position document (released in April 1993) which defines sustainable agriculture in a broad context, acknowledging environmental, economic and social imperatives (MAF 1993(b)).

MAF defines sustainable agriculture as "the use of practices or systems which maintain or enhance the natural resource base of agriculture, and any ecosystems influenced by agriculture, in a way that also maintains the economic viability of agriculture, the quality and safety of the food and fibre produced by these systems, and the ability of people and communities to provide for their social and cultural well-

being". This represents an evolution in emphasis in the policy framework from a pure economic agenda to one which also includes social and environmental perspectives.

Similarly European reform proposals for the Common Agricultural Policy (CAP) also feature a combination of social and environmental objectives (OECD, August 1993).

## MARKET OPPORTUNITIES

Applying the practices of sustainable agriculture presents opportunities to position New Zealand agricultural products as being of high quality, high value and environmentally "correct". Output would then meet our trading partners' environmental standards, consumers' preferences, in addition to ensuring our New Zealand resources are maintained for the benefit of future generations.

Foran (1993) argues that consumer lobbies will be the dominant forces on farm production systems, and that farming systems and practices will need to change to suit the market rather than the market accepting what the system designs to produce. Increasingly, this consumer preference is based on perceptions of the quality of the production process as well as the quality of the end products themselves.

In the United States, for example, it was estimated that in 1990 there were 15 million "environmentally concerned" households representing 17% of the US population (Rosendahl, 1990). However, as more products claiming environmental benefits have come onto the market, consumers have become increasingly sceptical about unsubstantiated benefits. Market observers have commented that claims by consumers that they are willing to pay more for "green products" have often not been matched by their actions. They put this down to consumer scepticism about questionable product claims. One retailer's survey results found that only 15% of consumers in 1992 felt that environmental claims on products were believable (Bennett, 1992).

Despite this scepticism, it is accepted that consumer perception of quality is increasingly extending beyond the safety and purity of the product itself to consideration of production processes and the impact of the production systems on the environment. For New Zealand agricultural produce, our competitive trading advantage will come increasingly from the proof of the environmental quality of our production processes; particularly the relatively natural farming conditions in New Zealand and the relatively low inputs of energy and chemical use from paddock to plate. These differences between New Zealand's natural farming environment - our climate, pastures and soils - and those of our competitors will increasingly be used to New Zealand's advantage. Certainly, relative to our competitors, New Zealand farmers utilise low chemical and energy input, with comparatively low environmental impact and with no subsidies.

New Zealand, therefore, is well placed to take advantage of consumer preference for environmentally sympathetic and high quality products. Overseas research has shown that in many countries, increasing numbers of consumers are prepared to pay a considerable premium for products produced in a way that they perceive to be environmentally "friendly". Coupled with moves to liberalise international

trade in agricultural produce, green consumerism now represents a considerable opportunity for New Zealand products. However, it is not going to be sufficient for New Zealand farmers to rely on a clean, green image of New Zealand in this type of market. The image must have visible integrity.

New Zealand farming cannot rest on its laurels. Consumer cynicism, the promulgation of environmental and animal welfare standards by our trading partners, and the implementation of the Resource Management Act will all create pressures on the agricultural industry and farmers to ensure that farming systems have environmental integrity.

This message is being taken seriously by farmers according to the results of the December 1993 Farm Monitoring Report (MAF 1993(a)). The majority of farmers interviewed had already, or were planning to, make changes to farm practices in response to environmental concerns. The two issues most frequently mentioned were reducing agrochemical use and improved animal welfare practices.

Changes to Farm Management Practices in Response to Consumer Pressure on Environmental and Animal Welfare Issues (MAF (a) 1993)

Farmer Response	Region			
	Northern North Is %	Southern North Is %	Northern South Is %	Southern South Is %
<b>Dairy</b>				
Made changes	60	36	70	50
<b>Sheep</b>				
Made changes	59	44	50	35

(These results are indicative only and have not been analysed statistically.)

On-farm accreditation schemes to meet consumer preferred quality standards are strongly supported, with 85-100% support from dairy farmers and 64-85% support from sheep farmers (variation between regions).

## FARMING SYSTEMS RESEARCH

Concern for the environment raises issues of identifying what specific activities or systems are, or are not, sustainable. It is often too simplistic to focus on an individual activity and identify it as the cause of a problem. Often, what appear to be causes are in fact only symptoms. To address this policy makers, farmers and researchers must consider the whole farm system.

Let us take an animal production example such as anthelmintic resistance in sheep. This is a sustainability problem, as it leads to loss of control of the parasite, contamination of clean sites and stock, and therefore reduces farm output and profitability. Amongst the direct causes of the problem may be over-drenching of stock, a failure to rotate anthelmintic types, or a failure to use laboratory testing for decision making. However, equally significant indirect causes may be the lack of an integrated management system for parasite control, stock policies such as an all sheep farming system, lack of farmer knowledge about drenching programmes, or an under-estimation of the potential risks.

While research frequently focuses on the direct causes of problems, the indirect causes are often left in the 'too hard'

basket. Farm management is about managing a whole farm system, and taking into consideration the inter-relatedness of numerous decisions. Walker (1982) described the farm management process as consisting largely of the co-ordination and application of information from a range of sources to farming resources. Farm management research covers a wide subject area from purely technical to purely management research, and from purely methodological to purely behavioural research.

In the drench example, farm management decisions must extend beyond a drenching programme to also consider stock policies, grazing management decisions, financial impacts, productivity and monitoring systems, and will be influenced by levels of understanding and farmer perception of risk. For farmers to adopt research, the research must be relevant within an holistic farm management framework. There are examples of technology that have been poorly adopted because of a lack of consideration for the whole farm system and, in particular, financial impacts. A recent example occurred when evaluating a technology transfer package for farmers affected by the 1989/90 drought on the east coast of the North Island. When examining the slow adoption of drought resistant pasture species in drought districts, it was found that many hill country farmers perceived the cost to be prohibitive and resowing too risky. While science had developed pasture species that were shown to be drought tolerant, the programme has not answered all farmers' questions about livestock performance on these species or establishment techniques.

The challenge to animal scientists is to identify the future animal production issues associated with agricultural sustainability. These will include the obvious factors such as stocking rates of pastoral hill country; use of agricultural chemicals and contamination of waterways; animal welfare concerns and genetic modifications; farmingsystems that could lead to weed spread or land degradation; farm vulnerability to adverse events, and single enterprise farming - to name a few. In addition, however, researchers can anticipate that environmental concerns will result in a shift in farming emphasis from simply increasing the productivity of farming to addressing the issue of improving the productivity of the natural resources on which farming is based (Jiggins, 1992).

Because of the complex nature of farm systems, none of these issues can be adequately dealt with as a single discipline. Whilst they all have implications for animal production, they also require a multi-disciplined approach to arrive at solutions that farmers would be willing and able to adopt. Technical answers to optimum stocking rates, for example, are likely to be based on elements of agronomy, soil fertility, animal health, animal production, soil conservation and farmer knowledge and skills. Technical fixes are themselves, however, still ineffective if the limiting factor to adoption is financial or attitudinal. The end-point of agricultural research, therefore, must be identified as a change in farmer behaviour and their farming practices, and should ideally be based on a clear understanding of farmer/farming needs.

#### **LEADING CHANGE**

In Australia, the National Soil Conservation Programme funds property management planning projects (Letts, 1992).

These are in recognition of the fact that sustainability must be deliberately planned for, that whole systems must be considered, and that sustainable resource use will not be achieved unless farmers have the necessary knowledge and skills and can foresee a profit.

New Zealand policy makers have also been assessing the mechanisms needed to help farmers move towards more sustainable farming systems. However, the New Zealand farming industry is now operating within a different policy and market framework to many of our competitors; for example, New Zealand has negligible public good extension and few farm subsidies. In a non-interventionist market economy new approaches are therefore necessary. Industry groups are important, and they are already responding to sector needs through industry extension programmes such as MRDC focus farms, Dairy Board consulting officers, and Watties organics programme. Government's role is to facilitate efforts by influential industry organisations rather than attempting to directly influence farmers.

In this environment, key influencers on what farmers produce and how they produce it are the processors/marketers who purchase farm products, as it is the processors and marketers who identify the end customers' needs and communicate these to farmers through price differentials, extension programmes, supply standards, or accreditation processes. To be effective, this approach requires processors/marketers to have longer term strategic views of the market place and to directly communicate these to farmers.

Another key influence group of the future will be regional and district councils as they introduce mechanisms to implement the Resource Management Act. Councils will need sound scientific bases for resource management planning processes and resource monitoring systems.

The New Zealand policy framework requires a new emphasis on a policy facilitation role for government, rather than using direct support and intervention. The government approach now is to work with stakeholders to ensure that their strategic planning contributes towards the sustainability of agriculture; that their approaches motivate rural and urban communities to act on their values (e.g., landcare approach); and that farmers are provided with the education and information they require to make sustainable farm management decisions. This latter point is arguably the most significant gap in the chain. It is no longer sufficient to simply make research findings available to farmers. Effective technical transfer means involving farmers in establishing research needs, and the entire research process, to ensure that the outcomes of useful research are applied.

#### **CONCLUSION**

The responsibility that rests with animal production scientists (amongst others) is to ensure that research considers the whole farm system and contributes to the sustainability of agriculture. To be effective, research must meet the market-led requirements of the agricultural industry for profitable and sustainable technologies and practices.

## REFERENCES

- Bennett, S: Green Commitment: Fading Out?, *Progressive Grocer Vol: 71* Iss: 12, December 1992
- Foran, B: A Time for Change, Issues Arising from the XVII International Grasslands Conference from a Developed World Viewpoint: *Proceedings of the XVII International Grasslands Congress 1993*
- Jiggins, J: From Technology Transfer to Resource Management: *Proceedings of XVII International Grasslands Congress 1993*
- Background Fact Sheet on OECD Activities of Relevance to Agriculture and the Environment: Joint Working Party of the Committee for Agriculture and Environment; *OECD August 1993*
- Letts, M. A: Property Management Planning: National Soil Conservation Program, Department of Primary Industry and Energy, Australia April 1992
- MAF (a): National Farm Monitoring Report, December 1993
- MAF (b) Policy Position Paper: Sustainable Agriculture March 1993
- Rosendahl, I: For Some, Earth Day is More than a Memory: It's a Catalyst, *Drug Topics, Vol: 134* Iss: 10, May 1990
- Walker, A. B: Knowledge, Beliefs, Attitudes, Motivation and Extension Practise, unpublished *Masterate Thesis, December 1982*