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The development of management guidelines
for sustainable livestock farming
in the Hawke's Bay.

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Agricultural Science
in Farm Management at Massey University.

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ABSTRACT

Regardless of how sustainable land management is defined, it will never be achieved unless land users are involved in, and committed to, its attainment. To commit to a goal of sustainability, stakeholders must share in the identification of resource management problems and in the development of solutions that are both economically and socially acceptable.

Facilitated workshops were held with twelve farmer and two agribusiness groups in the Hawke's Bay during July and August 1994. The workshops were held to involve participants in the development of guidelines for pastoral farming in Hawke's Bay and Wairoa, using the "*by farmers for farmers*" approach. The farmer workshops were used to develop an operational description of sustainable livestock farming and to identify the main components of sustainability. The agribusiness workshops sought to encourage support by this sector for the guidelines and the farmers who would implement them.

The advantages associated with sustainable farming applied to all components of the system. The farmer and family, natural resources (the farm), the community and future generations all were all seen to benefit from sustainable farming. Through the workshops, the farmers identified the components and criteria that describe sustainable farming. They suggested that sustainable farming may be recognised by practices that result in productive soil, sufficient water quantity, good water quality, productive pasture, appropriate trees, productive animals, and successful, prosperous and flexible farmers. Using the concept pyramid process, farmers identified key management practices that would result in the sustainable use of soil, water, animals and plants in the farming system.

A farming committee was elected to represent the views of farmers, and work with the consultant commissioned by Hawke's Bay Federated Farmers, to produce the pastoral farming guidelines. The management practices identified by farmers were written to a set of guidelines, which were circulated for public comment and submission. The workshop participants, stakeholders and the general public were involved in the consultation process, to continue the participatory approach utilised in the workshops. All workshop participants were sent a complimentary copy of the pastoral guidelines and a questionnaire. The survey aimed to assess the participants' perceptions and usage of the guidelines, as well as gauge farmer interest and obtain direction for follow-up work. In broad terms, the guidelines met the expectations of farmers and were viewed as being useful for encouraging discussion about, and implementation of, sustainable farming practices.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

Regardless of how sustainable land management is defined, it will never be achieved unless land users are involved in, and committed to, its attainment. Since the 1980's, there has been growing acceptance in New Zealand that the involvement of stakeholders in environmental decision-making underwrites the attainment of socially acceptable sustainable land use. To commit to a goal of sustainability, stakeholders must share in the identification of resource management problems and in the development of solutions to these which are both economically and socially acceptable. Involving land users in planning, developing and implementing more sustainable land use systems, leads to the point where they assume responsibility and ownership of this endeavour (Campbell, 1992a; Campbell, 1992b; Wardle 1994).

Agriculture in some form, is the dominant land-use for over 75% of New Zealand's physical land area (Statistics New Zealand, 1995). Farmers and Government recognise that there are new ecological and social challenges facing agriculture, and hence, the use of land. Environmentalists, conservationists and those involved in the use of land for leisure, are claiming the right to comment on and influence the management of land under agriculture.

Farmers have a direct stake in resource-use and thus, logically should be closely involved in the identification, planning and implementation of sustainable farming systems. Chapter One explains the rationale and outlines the role of farmers, the Hawke's Bay Regional Council and Hawke's Bay Federated Farmers in the development of resource-use guidelines for sheep and beef cattle farmers in Hawke's Bay and Wairoa.

1.2 Land use and environmental legislation in New Zealand

New Zealand has always had a variety of land or natural resource-based industries, but the most significant productive use of land has always been agriculture (including horticulture) (Rayner, 1990). The post-World War II economy generated a commodity boom in the 1950's, with a high demand for agricultural products. This demand encouraged the drive to increase production from pastoral farms, and Government policy implemented during this period focused on encouraging development and protecting the agricultural industry, in order to accommodate growth in this sector (Rayner, 1990). The Marginal Lands Act (1950), for example, resulted in the establishment of the Marginal Lands Board, to lend money for the development of unproductive and marginal land including clearing scrub, bush and timber. Similarly, the Livestock Incentive Scheme of 1976 was designed to increase stock numbers (Rayner, 1990) and the Supplementary Minimum Price Scheme (SMP) of 1978 introduced minimum prices for agricultural products. None of these pieces of legislation formally considered the environmental or other consequences, of the intensification of pastoral agriculture which they were designed to promote.

From the 1970's until the 1980's, environmental legislation and Government policy in New Zealand concentrated on increasing agricultural production rather than sustainable resource use. Major changes in environmental legislation since 1988, have led to existing legislation being replaced, amended or complimented by a single dominant statute, the Resource Management Act 1991 (RMA). The RMA was developed to provide a single, clear reaching objective, namely "to guide resource management in New Zealand". The RMA differs from previous legislation, in that it has a single purpose: "to promote the sustainable management of natural and physical resources". By bringing together laws governing land, air and water resources, the RMA introduced a totally new approach to environmental management. This integration means the environment can be looked at as a whole in planning and decision making with a standard set of requirements for all resource users.

Sustainable management is defined in the act (Section 5 (2)) as:

"the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while:

- (a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and*
- (b) safeguarding the life-supporting capacity of air, water, soil & ecosystems; and*
- (c) avoiding, remedying, or mitigating any adverse effects on the environment.*

1.3 Sustainable management

Attaining sustainable management, the primary purpose of the RMA, can be interpreted in a myriad of ways according to the user's perspective. The definition of sustainability reflects a number of factors, including the time frame (e.g. short versus long term), the components (e.g. economic, social and ecological), the rate of resource use or extraction, and the commercial structure of the venture.

Sustainability is a dynamic concept and cannot be achieved as an absolute state (FAO, 1993; Whitehouse, 1992). However, it is possible to judge the relative degrees of sustainability, for example Class VII land under tree cover is 'more sustainable' than Class VII land under pasture. Some signs of non-sustainable land-use on hill country include: on-site land degradation; off-site sedimentation and siltation leading to reduced water quality and flooding; a decline in rural services and rural infrastructure; and 'depressed' farmers. The RMA was developed to try and address sustainable management issues in a consistent and holistic way.

1.4 Participation in the planning process

The RMA allows for a greater level of participation in the planning process than under the land-use planning legislation which preceded it. The RMA replaced the Town and Country Planning Act 1977 which in turn replaced its 1953 predecessor. The 1977 Act was seen as an advance on the 1953 Act in that "it provided wider opportunities for groups and individuals to take part in both district and regional planning processes" (New Zealand Planning Council, 1977). The background to this thinking was that regional planning was no longer envisaged solely in the limited sense of physical land use planning, but in terms of broad policies for achieving a particular future for a region together with the allocation of resources to implement these policies (New Zealand Planning Council, 1977).

The RMA provides opportunities for the community to suggest how resources in their region will be managed by local authorities. Local authorities, for example, are required to implement a consultation and submission stage during the preparation of plans. However, the community often feels they have not been consulted on important issues or have not had an opportunity to “have their say”. The process used may not always be the most appropriate for the resource-user, although it may fulfil the expectations of the authority. The RMA requires councils to consult with the public when a plan is “notified” (the exceptions being Iwi authorities and Government departments who must be consulted during the development stages). Councils act within the law by consulting at the notification stage, however, a more pragmatic and participative approach may be to meet with land-users to discuss the structure and practicality of rules and other methods in the proposed plan.

Sustainable management is the purpose of the RMA, however, disparities may exist between resource-user and planner definitions of sustainable management and this often leads to a lack of communication and conflict. Community involvement in a process to achieve a jointly owned goal is believed to be the most effective method of achieving sustainable resource use in New Zealand (Donaldson, C. 1995, pers. comm.). Campbell (1992c, p.18) reached a similar conclusion when discussing sustainability in Australia, by commenting that “whether at farm, catchment or national scales, over a few years or many generations, community participation is critical to achieving sustainable land management”.

1.5 Environmental trade issues

Environmental trade barriers based on non-sustainable land management practices or animal welfare issues are a potential threat to New Zealand’s pastoral export industry. In 1993, the Ministry of Agriculture and Fisheries (MAF) released a Position Paper on Sustainable Agriculture (MAF, 1993). One reason for the Paper’s inception, was that consumers world-wide are increasingly concerned about the effects of some farming systems on the environment. These concerns provide opportunities for New Zealand to position our products as ‘clean and green’, and as coming from a high quality, more sustainable farm environment. Resource-users must ensure that sustainable production methods are used to capitalise on this ‘clean green marketing image’.

Overseas and domestic customers are raising concern about the environmental effects of agricultural production and how resource users deal with off-site issues. One way to address these concerns is to prepare user guidelines, which highlight sustainable farming practices and encourage monitoring by the land-users to provide future proof of prudent resource use. Guidelines could be prepared by the individuals involved in production activities from the land, or by industry with collaboration with resource users. Farmers have already been proactive and involved in establishing 'best' practices for resource use in several regions (Parminter et al., 1993; NOSLaM, 1996). This thesis outlines the process undertaken by Hawke's Bay Federated Farmers and sheep and beef cattle farmers to establish "best practices" to address environmental concerns associated with pastoral farming in Hawke's Bay.

1.6 Hawke's Bay perspective

1.6.1 The Hawke's Bay region

The Hawke's Bay Region covers a land area of 1,240,024 hectares on the east coast of the North Island of New Zealand (Hawke's Bay Regional Council, 1995). It stretches from north of Mahia Peninsula to just south of Porangahau. It is flanked in the east by the coastline and in the west by the Ruahine, Kaweka, Huiarau and Ahimawana Ranges. Topography varies in the region from steep hills, rolling and hilly country, to broad plains. The Hawke's Bay Region is administered by the Hawke's Bay Regional Council and four main territorial authorities: the Wairoa, Hastings and Central Hawke's Bay District Councils, and the Napier City Council.

1.6.2 Land use

Land use in the Hawke's Bay region ranges from extensive pastoral farming and forestry to more intensive livestock farming, cropping and horticulture. Pastoral farming, the major land use in the region (Valuation New Zealand, 1994), ranges from steep hill country sheep and beef cattle breeding properties to lowland finishing and mixed enterprise units. Exotic planted forests, which are increasing in area, are found mainly in the Hawke's Bay and Wairoa districts. Planted forests and indigenous forest species, including areas of advanced regenerating forests, cover almost 30% of the Hawke's Bay region (Hawke's Bay Regional Council, 1995). Cropping of grain and field vegetables takes place predominantly on the fertile lowlands. Horticulture (pipfruit, stonefruit and viticulture) is an important land use and continues to expand in Hawke's Bay.

1.6.3 Pastoral farming systems

Both breeding and finishing sheep and beef cattle properties are found in Hawke's Bay. Depending on climate, these farms are located in districts which range from 'summer dry' to 'summer moist'. The 'summer dry' properties are generally situated away from the western ranges and higher hills. The 'summer moist' farms tend to be situated on the western side of Hawke's Bay.

The 'summer dry' properties are typically breeding properties. The contour of these farms ranges from limited areas of flat to a majority of medium hill and some steep land. The main sheep policies involve the rearing of flock replacements and the sale of lambs either to the works (from 'easier country') or as store lambs (on 'harder properties'). The majority of the 'summer dry' properties have breeding cows, with some winter finishing of cattle to slaughter.

The 'summer moist' properties also breed their own sheep replacements but the majority of lambs are sold prime. Some units run breeding cows but also have more flexible cattle policies, for example, bull beef.

A third category of livestock property is also found in the Hawke's Bay. Finishing properties tend to be mixed hill and flat farms and generally small with high stocking rates and stock performance relative to those on steeper (and drier) hill country. The 'summer dry' units in mid and central Hawke's Bay, often purchase ewe replacements rather than breeding and draft lambs early to the works. (Ministry of Agriculture and Fisheries, 1995)

1.6.4 Role of the Hawke's Bay Regional Council

Regional Councils are local authorities with responsibilities for water and soil conservation, pollution control, coastal management (with the Department of Conservation) and air pollution. Regional councils issue resource consents for activities related to these fields and are also likely to deal with natural hazards of regional significance, for example, flood protection works on a major river.

Under the RMA, each regional council must prepare a regional policy statement (RPS). The RPS provides an overview of the region's resources and must pay attention to the links between the use of different resources, for example, the effect of a particular land use on water quality and availability. Regional plans may also be prepared for a particular resource or an aspect of resource use. Regional plans set rules, establish processes that people will be expected to follow in managing resources, and specify activities that require resource consents.

The Hawke's Bay Regional Council proposed a Regional Hill Country Erosion Control Plan in September 1993, after holding discussions with land-owners, the forestry sector, other interest groups and territorial local authorities. The Regional Hill Country Erosion Control Plan proposed that landowners self-regulate vegetation removal and earthwork activities on their properties. Operators (contractors) would be certified to undertake earthworks (for example, cut tracks). Non-certified operators would still be able to apply for a land use consent through the normal regulatory process (Hawke's Bay Regional Council, 1993).

The regional plan was prepared to extend the statutory life of the Section 34 transitional regional rules (formerly the Section 34 notice established through the 1959 Amendment of the Soil Conservation and Rivers Control Act 1941). The Section 34 notice provided regulatory controls on hill country land-use to prevent the adverse effects of erosion occurring through forestry or farming operations. The Section 34 notice also sought to control the downstream effects of erosion. The Hawke's Bay Regional Council believed retention of the Section 34 notice to be a useful way of reducing the adverse effects associated with some land uses on hill country. The Regional Council believed that controls on some land uses were needed to prevent soil erosion, and it was for this reason that the Regional Hill Country Erosion Control Plan was prepared.

Many sectors did not view the proposed Hill Country Erosion Control Plan in a positive way. Some of the main comments received through the submission process included:

- an actual and potential overlap with the provisions of district plans;
- the legality of the self-regulatory option;
- the uncertainty generated by using Land Use Capability (LUC) units or slope categories to delineate consent classes;
- insufficient clarity for performance standards; and
- the perceived lack of Maori consultation (Hawke's Bay Regional Council, 1994).

It was due to these factors that some farming groups offered considerable resistance to the plan's introduction. Although no more restrictive than the preceding rules, the regional plan was perceived by farmers to be a threat to their normal practices, and therefore, a threat to their lifestyle and profitability. After such feedback, the Regional Council elected to withdraw the Regional Hill Country Erosion Control plan in February 1994 and instead to visually monitor land use activities over a two year trial period.

1.6.5 Role of Hawke's Bay Federated Farmers

Federated Farmers of New Zealand (Inc.) is a sector organisation working on behalf of farmers, their families and the rural communities within which they live (Federated Farmers, 1996). The Federation directly represents the specific interests of arable, dairy and meat and wool farmers. The mission statement of Federated Farmers of New Zealand is: *"to add value to the business of farming"*.

Federated Farmers view themselves as "the voice that sticks up for farming" and "taking a stand for those on the land" (Federated Farmers, 1996). The Federation comprises twenty four provisional organisations and a national head office. Members pay an annual fee to join Federated Farmers and receive provisional and national support. The provisional offices act as a point of contact for members and provide information and advice to them on topics such as: labour relations; resource consents; farm safety and legal obligations; fencing and boundary obligations and stray stock. Submissions on legislation and focusing on issues such as property rights, accident compensation, animal welfare and rural funding are functions undertaken at the national level. The Federation also produces "Straight Furrow" (a national rural newspaper).

Hawke's Bay Federated Farmers opposed aspects of the Regional Hill Country Erosion Control Plan. They were concerned that the plan was: too restrictive; contained greater control than farmers thought was necessary; too dictatorial and that "farmers were concerned they would be told what to do". This prompted Hawke's Bay Federated Farmers to approach the Regional Council for help in preparing a Pastoral Code Of Practice or Pastoral Guidelines for Hawke's Bay and Wairoa farmers. Federated Farmers and farmers (members and non-members) considered they were in a better situation than a planning organisation, to write their own guidelines on how their resources should be managed. This approach to regional resource management was termed "*by farmers for farmers*".

A Pastoral Code Of Practice was envisaged by Federated Farmers as a parallel to the Forestry Code of Practice which was prepared and written by the forestry industry (Logging Industry Research Organisation, 1993). The aim of the Forestry Code of Practice, which is closely aligned with the aim of the RMA, is "to plan, manage and carry out forest operations in a sustainable manner" (Visser, 1994).

A Pastoral Code of Practice would result in self-regulation of land use and a positive, educational approach to encourage improvement of land-use methods rather than restricting activities. Such a document would also indicate a desire to work towards sustainable resource use - a 'target' sought by domestic and overseas customers (see Section 1.5).

To initiate the process for preparing the code of practice, a small steering group of four farmers (the Farming Committee) was elected to represent farmers, and work with its consultant and the Hawke's Bay Regional Council. The three men and one woman represented farmer interests in four main areas, namely Wairoa, Kotemaori, Tangoio/Napier and Central Hawke's Bay. The President of Hawke's Bay Federated Farmers and the Chairman of Wairoa Federated Farmers were members of the committee.

The committee's aim was to prepare a document highlighting sustainable farming practices in Wairoa and Hawke's Bay. They established reasons for carrying out the exercise at the outset and these were used to maintain direction and focus throughout the process. These included (not in any particular order):

- to avoid the imposition of rules by local authorities;
- to satisfy environmentalists and other pressure groups; and
- to help maintain access to and develop new markets for produce.

1.7 Process used by Waikato Federated Farmers

The Waikato regional committee of New Zealand Federated Farmers (Inc.) undertook a similar activity in their region to develop guidelines for pastoral farmers, at the same time as their Hawke's Bay counterparts. Waikato Federated Farmers commissioned a sub-committee to produce a "grazing management practices guide" for farmers who wished to implement sustainable methods of farm management (Parminter et al., 1993). Part of the process included a series of three workshops facilitated by social scientists from AgResearch (Whatawhata) in order to identify sustainable farming practices already used by farmers.

The Waikato Federated Farmers wanted farmers to be able to contribute towards a definition of sustainability and how this could be achieved at the local (i.e, farm and catchment) level. These goals formed the basis of the workshop purpose, namely:

- to develop an operational definition of sustainable farming;
- to identify farming practices important to profitable, sustainable farming and how they affect it; and from this; and
- to list the subjects or sections to be included in Waikato Federated Farmers booklets on sustainable farming practices.

Workshops were held at Cambridge, Huntly and Otorohanga. The three workshops were conducted in the evening during the course of routine Federated Farmers meetings. Between 30 and 40 farmers attended each workshop. The farmers represented a range of backgrounds and enterprise types, including dairy, mixed livestock and deer. Federated Farmers took steps to deliberately encourage discussion and debate amongst members who held a range of political views and opinions about the topic of sustainable land use.

The process developed by an AgResearch scientist and used by the Waikato subcommittee (Parminter et al., 1993), was adapted to the Hawke's Bay scenario. This principally related to the use of the concept pyramid process as detailed in Sections 3.2 and 3.3.2.

1.8 Scope of Thesis and Research Objectives

The overall aim of the research reported in this thesis was to develop a process for resource user' participation in the development of resource management guidelines, in order:

- to develop a resource-user definition of sustainability in pastoral farming; and
- to study a participatory approach to the development of resource guidelines.

1.9 Thesis Outline

The thesis comprises six chapters. Chapter One has outlined the rationale and background to the workshop process and detailed the involvement of the Hawke's Bay Regional Council and Hawke's Bay Federated Farmers in this work. Chapter Two reviews literature on sustainability, environmental legislation and participation, and provides a basis for the discussion of results presented in later chapters. The facilitative method used in the farmer and agribusiness workshops is detailed in Chapter Three and results from the workshops are outlined and discussed in Chapter Four. The process used to produce the guidelines for sheep and beef cattle farmers, and the evaluation of the completed guidelines is the topic of Chapter Five. The concluding Chapter provides recommendations for those wishing to repeat the process for conducting workshops and preparing guidelines, and outlines where further work is required.