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Implementing Sustainable Agriculture

Perceptions of Hill-Country Farmers in the Rangitikei District

A Thesis Presented in Partial Fulfilment of the Requirements for the Degree of Master of Resource and Environmental Planning

At

Massey University

By

Grant Frederick King
“All there is to thinking, is seeing something noticeable which makes you see something you weren’t noticing which makes you see something that isn’t even visible.”

Norman Maclean
‘A River Runs Through It’
Abstract

This thesis investigates the perceptions concerning the implementation of sustainable agriculture in hill-country farming in New Zealand, primarily by using a survey of farmers from the Rangitikei District.

A literature review identified three main groupings of approaches to sustainable agriculture: a production or economic based approach; a stewardship and intergenerational equity approach; and a social approach which emphasised social equity and rural community issues. It also stressed the importance of scale issues in sustainable agriculture with the analysis focussing on horizontal, vertical and temporal scales.

It appears that the ‘ideals’ of sustainable agriculture as outlined in the literature are not being translated into reality in New Zealand, and indeed the ideals of New Zealand farmers may not correspond to those presented in the literature. A conceptual framework was constructed to further investigate this issue of the gap between the ideal end-state of sustainable agriculture and the actual practices. A survey of 260 ‘conventional’ farmers in the high-terraces and hill-country of the Rangitikei was selected to empirically test the conceptual framework. The viewpoints of these farmers were contrasted with those of: a small sample of certified organic farmers who ran similar land-uses on similar land-classes; and a sample of professional staff who were selected from the regional councils, central government, industry groups, a farmer organisation, a conservation organisation, scientists and academic staff. A 78 question survey ascertained farmers ideals with regard to sustainable agriculture, what they considered to be desirable sustainable farming practices; what they considered to be barriers to sustainable agriculture; and what implementation methods (eg. regulation, education, rates rebates) they considered to be acceptable. The actual farmers practices (eg. pesticide use, fertiliser use, agroforestry, erosion control) were also surveyed using a relative scale which measured change over the last five years.

The key findings of the sample survey were as follows. The overall preference for the ‘hands-off’ implementation methods, such as ‘education’ and ‘further research’ by all three groups. There was a lack of recognition of social characteristics of sustainable agriculture by the professional staff, compared to their acknowledgement of economic and environmental considerations. The practices undertaken by farmers had improved over the timeframe measured, although much of the change was for economic reasons as opposed to environmental considerations. The most commonly identified barriers by all the respondents were economic in nature.
The thesis concluded with a discussion of the policy implications of research findings. The most important policy implication discussed was whether the preferred methods for implementing sustainable agriculture (i.e. 'education' and 'further research') could actually overcome the perceived barriers to achieving sustainable agriculture which were predominantly economic in nature. Some further suggestions were also made on further research directions; most notably that the factors identified in the conceptual framework need to be tested on a wider range of farm-types and other regions in New Zealand.
Acknowledgements

My gratitude, first and foremost, goes to my supervisor Murray Patterson. The guidance provided by Murray towards undertaking the survey and completing the thesis was invaluable, along with his advice, feedback and encouragement, and the resulting discussion shaped the thesis and analysis within.

I am also indebted to Farmlands Trading Company for providing the prize for the prize draw for the completed conventional farmer responses to the survey, which would have increased the response rate from this sample group, and allowed for greater analysis.

A sincere vote of thanks also goes to the various people who offered ideas and opinion, and provided a foil to run ideas past on potential reasons for the survey results. The different perspectives on agricultural sustainability issues that they brought to the discussion in the thesis was very useful.

To the farmers and staff from various organisations who completed the survey responses I am very grateful, for without whose effort there would have been no results to analyse within this thesis. The time these people took to write responses and their thoughtful answers provided, and comments offered, were varied and very interesting, and also highlighted the breadth of opinions held about the issue of agricultural sustainability.

I am particularly grateful to my friends and family for their support and forbearance whilst I worked towards completing this thesis.
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**Glossary of Abbreviations**

The following are the abbreviations used commonly throughout this thesis, along with their meaning in full.

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<td>Biodynamic Gardening and Farming Association</td>
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<td>CRI</td>
<td>Crown Research Institute</td>
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<td>ICRAF</td>
<td>International Centre for Research in Agroforestry</td>
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<td>IFOAM</td>
<td>International Federation of Organic Agriculture Movements</td>
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<td>IUCN</td>
<td>The World Conservation Union</td>
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<tr>
<td>LISA</td>
<td>Low-Input Sustainable Agriculture</td>
</tr>
<tr>
<td>MAF</td>
<td>Ministry of Agriculture and Fisheries</td>
</tr>
<tr>
<td>MfE</td>
<td>Ministry for the Environment</td>
</tr>
<tr>
<td>MUIED</td>
<td>Massey University Institute for Executive Development</td>
</tr>
<tr>
<td>NZ BP CC</td>
<td>New Zealand Biological Producers and Consumers Council</td>
</tr>
<tr>
<td>NZFFA</td>
<td>New Zealand Farm Forestry Association</td>
</tr>
<tr>
<td>RMA</td>
<td>Resource Management Act 1991</td>
</tr>
<tr>
<td>SCGSLMR</td>
<td>Strategic Consultative Group on Sustainable Land Management Research</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>WCED</td>
<td>World Commission on Environment and Development</td>
</tr>
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