SHIFTING GROUND: AN EXPLORATION OF APPROACHES TO SOIL CONSERVATION UNDER THE RESOURCE MANAGEMENT ACT 1991

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MARILYN G REGNAULT

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ABSTRACT

The research considers how and to what extent soil conservation is changing under the Resource Management Act. Case study councils in the Hawke's Bay, Gisborne and Manawatu-Wanganui regions are used to illustrate these changes. A national perspective of the approach and direction councils are taking for soil conservation is also gained from analysis of regional policy statements and regional land management plans.

The dominant underpinnings of soil conservation are examined at an international level. The move from government intervention and regulation, to devolved responsibility and increased public participation has seen a dramatic change in approaches and techniques taken for soil conservation. In New Zealand this shift in management style has been enabled by the environmental administration and legislative reforms of the 1980's. The devolution of responsibility for soil conservation to the regional government level, along with the advent of the Resource Management Act, has changed the focus and the planning process for soil conservation.

Under the Resource Management Act's provisions, soil conservation is included as a management approach to achieve the broader objective of sustainable land management. The emphasis placed by the Act on integrated management has broadened the previously narrow objectives of soil conservation. Councils are observed to be struggling with the complexities involved in integrating natural resource management.

The scope for flexibility within policies and plans has allowed diverse and numerous approaches and techniques to be taken throughout New Zealand for soil conservation. Regional differences have arisen out of this management regime due to physical and institutional differences. Regional differences in the availability of funding and resources are perceived to affect a councils' ability to effectively mitigate soil degradation. Because of these disparities, some councils have been better enabled to tailor new and innovative approaches, while others are inhibited by their regional circumstances.

A common element of all councils' approaches is the move from prescriptive to co-operative style approaches. Such approaches encourage community understanding and commitment to participate in identifying and solving land degradation issues. The research discovers that a combination of co-operative and prescriptive approaches are most sucessful in achieving land management objectives.

The research shows that regional monitoring needs much improvement to be able to assess the state of the land resource and the consequent success or effect of specific land management approaches. An improved monitoring regime requires regional and central government to work together to gather information and formulate a common set of objectives that can be applied to each region. Processes such as assessing the benefits and costs of approaches, considering alternatives, monitoring outcomes of plans and policies as well as environmental effects, enable councils to formulate comprehensive land management approaches. However, councils need to have the resources and skills, as well as the commitment, to fully undertake these processes.

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TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

Tables

Chapter One

INTRODUCTION TO THE RESEARCH

Soil conservation has been prominent in New Zealand's land management history. Colonial land development caused widespread land degradation that led to concern about land use practices in rural areas. In response to this, soil conservation practices began to be established during the 1930's, where early measures were influenced by North American and Australian trends. The passing of the Soil Conservation and Rivers Control Act in 1941 reflected an early national policy response, heralding the "end of a pioneering land development era."

Methods for soil conservation have evolved in an ad hoc fashion over the past fifty years in response to environmental, economic and institutional factors. As in other forms of land use planning, strong government direction and financial support has been influential. A wide blend of measures including structural and regulatory planning, zoning and elements of education have been applied to soil conservation practice.

Critics of past soil conservation approaches considered that policies relied too heavily on regulatory measures and incentives, from which benefits were largely captured by individual land users (Delamore, 1990). This situation was amended with institutional and legislative reforms of the 1980's, creating an environment in which alternative approaches to managing natural resources are encouraged. These reforms reflect the transition from an interventionist and prescriptive state of planning and management, to one of greater co-operation and flexibility, with the devolution of central government leadership and greater empowerment of local government.

Under the Resource Management Act 1991, functions of regional councils include the development and implementation of regional plans. The Resource Management Act is driven through outcomes-based environmental assessments, rather than through activities-based prescriptions. Within the Act's guidelines, there is considerable flexibility for resource management responses, with an onus on councils to weigh up

costs and benefits when considering alternatives during decision making. This scope for flexibility within policy and plans assumes that there will be variation in the types and quality of policies and plans across the country. Within this situation, the Ministry for the Environment has the key role of facilitating the commitment of regional and local government (Dixon, Ericksen and Michaels, 1995). By considering the approaches and consequences of the different regional plans for soil conservation, it will be possible to evaluate whether the role of central government is adequate, and if regional diversities in soil conservation and land management need to be attended from a more central government level.

A strong component of sustainable management is the principle of integrated management. This places soil conservation practice into the more general framework of sustainable land management. Because there are no specific directives for soil conservation, the commitment of regional councils in eliminating the problems of soil erosion and land degradation will be reflected in the degree of priority and resources allocated to soil conservation.

The success of regional councils in terms of sustainable land management is affected not only by the priority given to soil conservation, but also by the techniques and approaches used. Techniques such as economic measures, Landcare groups and technical and educational programmes often rely on community involvement, responsibility and cost sharing. Hence the success of various soil conservation approaches is also determined by a community's enthusiasm, co-operation and accountability.

Under the Resource Management Act, a requirement for greater accountability in the planning process, achievement of environmental outcomes and increased flexibility has provided impetus for regional councils to consider alternative ways of planning and implementing their land management functions. Because of this increased flexibility, soil conservation programmes have the scope to be regionally diverse, innovative and tailored to their communities.

Research Aim and Objectives

The broad aim of the research is to determine

How and to what extent is soil conservation changing under the Resource Management Act regime?

This aim is investigated through a set of objectives and corresponding research questions.

Objective 1. To identify soil conservation approaches being used by regional councils.

Are there common approaches to councils' soil conservation programmes?

Objective 2. To identify who is involved in developing policy and implementing soil conservation practices.

What is the function of central government?

What is the function of regional council?

What functions do local businesses and groups play?

Objective 3. To identify the links between soil conservation practice and outcomes of regional councils.

How do regional councils interpret their statutory obligations?

What are the informal obligations?

What mechanisms are used to ensure that benefactors of soil conservation works are accountable in the long term?

Objective 4. To assess the extent to which soil conservation is integrated with sustainable land management.

What is the organisational evidence of integration?

Is soil conservation integrated with other resource management?

Structure of Study

The study proceeds by providing in Chapter Two a brief overview of early resource exploitation and the need for, and development of soil conservation as a land use practice from the 1880's to the 1960's. Government policy responses are outlined, illustrating the growth of the soil conservation movement. Legislative and organisational mandates for soil conservation are discussed in relation to their effect on the implementation and consequent impact and success of programmes. The major restructuring of resource management law and local government in the late 1980's is reviewed, providing the context for alternative approaches to be used. A brief outline of current soil conservation mandates of central and regional government is given.

Chapter Three identifies key paradigms underlying soil conservation approaches. The theoretical principles and techniques used within each paradigm are described along with the elements that drive the various approaches. This chapter sets the theoretical context for investigating the approaches demonstrated by the case studies in the following chapters.

Chapter Four presents the research methodology. This chapter provides the theory and rationale for choosing three case study regional councils and undertaking semi-structured interviews. The method of plan coding is employed to evaluate the land management sections of regional policy statements and relevant regional land management plans. Plan coding provides information about soil conservation in a systematic way.

Chapter Five contains the findings from the plan coding of the regional policy statements and regional plans, and the case study interviews. A descriptive text of the case study councils and their regions is given, describing each area's historical and current approaches to soil conservation.

Analysis of the plan coding and interview findings allows general themes to be constructed in Chapter Six. These six themes are arranged around the research

objectives and questions. The themes outline how and to what extent soil conservation is changing under the Resource Management Act.

Chapter Seven draws together the material of the preceding chapters. Implications for soil conservation are discussed in relation to the research objectives. Observations relating to how policy and practice might be improved are drawn from the research.

Chapter Two

SETTING THE SCENE

Chapter Two reviews the institutional and legislative context in which soil conservation has developed in New Zealand. This historical review serves to illustrate the evolving nature of soil conservation as an approach to managing land degradation. The rationale for soil conservation is examined in light of government policy responses to land and soil erosion, with the Soil Conservation and Rivers Control Act setting the context in 1941 for innovative catchment planning. The multiplicity of agencies and statutes that evolved over time indicates the growth and increasing complexities of the movement. This led to the need for both organisational and legislative reforms. The resulting institutional and legislative environment is central to the discussion, providing the context and scope for new and innovative planning approaches. The latter part of the chapter outlines the role of soil conservation under the new framework of the Resource Management Act with respect to central and regional governments' functions and responsibilities.

Early Resource Development and Exploitation

The use of New Zealand's land and natural resources commenced pre-eighteenth century with Maori occupation and agriculture. Early Polynesian fires appear to have had a significant effect on the vegetation and stability of the landscape, especially in the South Island. By the 1800's European settlement and pastoral occupation had begun and with it came the widespread clearance of forests, bush and tussock lands for the creation of clear land for farming. The forest and bush were perceived as an impediment to settlement and other land uses. The increasing population and creation of a growing export trade in wool led to an increased demand for land. In the North Island, the defeat of the Maori people in the 1840 land wars, subsequent confiscation and sale of land helped increase settlement and land development (Grey, 1994; Roche, 1994a; Sinclair, 1988).

By the early 1900's, farming practices were organised to meet production requirements, particularly those of overseas markets such as Britain. The application of science and technology to farming problems such as the use of fertilisers, encouraged and increased production. The period was also marked by increasing government intervention in the form of producer boards (Roche, 1994a).

With the increasing development of land for agricultural and pastoral use came signs of land degradation. Attention was brought to the rate of soil erosion caused by the burning of tussock grasslands by Buchanan, a botanist, as well as other individuals. Formal concern about land degradation became evident with the charging of the Canterbury Pastoral Land Commission, (the first of many commissions) to investigate the settlement of high pastoral lands in Canterbury in 1910. Their report discussed the extent, seriousness and means of counteracting land depletion. The Southern Pastoral Land Commission in 1920 also investigated the extent of land deterioration on crown pastoral lands (Roche, 1994a). Despite numerous reports and commissions of inquiry into the increasing evidence of land degradation, policy responses of central government were ad hoc, usually short in duration and only applied to limited areas (see Table 2.1) (Clough and Hicks, 1993).

A wide variety of government responses to land degradation were employed from as early as 1893 to encourage land development. Acts such as the Advances to Settlers Act 1894, and the Land Improvement and Native Lands Acquisition Act 1896, provided for openings of new land to be settled and developed. Whilst encouraging land development, statutes such as the Deteriorated Lands Acts 1925, were concurrently passed to counteract the growing degradation. These conflicting policy responses are detailed in Table 2.1.

Table 2.1 Policy Responses to Land Development and Land Degradation.

- Canterbury Rivers Act, 1863 - created a board of river conservators with powers to rate property liable to inundation and to carry out flood protection and erosion works.
- Advances to Settlers Act, 1894 - made loans at low interest available for land purchase and improvement costs.
- Land Improvement and Native Lands Acquisition Act, 1896 - provided for openings of new land by setting aside bush-land for improving farm settlements.
- Discharged Soldiers Settlement Act, 1915 - provided finance to settle ex-servicemen on farms.
- Deteriorated Lands Act, 1925 - provided relief for occupiers of selected Crown lands suffering hardships from degradation on their farms.
- Land Amendment Act 1929 - gave aid for openings to new land by setting aside bush-land for farm settlements.
- Small Farms (Relief Unemployment) Act 1932-3 - aimed at setting unemployed people in 5 - 10 acre intensive farms. The unemployed were hired to clear these farms from scrub or reverted lands.
- Land Deterioration and Soil Erosion Committee formed, 1938. It produced a compendium of information on soil erosion, flooding and rivers control.

Source: Adapted from Grey, (1994), Roche, (1994a) and Sinclair, (1988).

Increasing agriculture and pastoralism, considered the 'expansionist' era (1840 to 1920's), constitutes perhaps the most influential period in determining rural land use in New Zealand. The economic prosperity of this era led to greater political ambition for New Zealand's agricultural industry, making land policy vital to everyone. Although overall agricultural production expanded during this period, there were signs of localised but increasing environmental degradation. This was attributed to the cumulative impact of pastoralism and the more recent occupation of lands initially rejected as unsuitable for settlement (Roche, 1994a).

Various soil conservation programmes were proposed by the Land Deterioration and Soil Erosion Problem Committee and also the Department of Agriculture, though most ran against the short term interests of farming and contradicted the maximum production goals of government agricultural policy. Farmer opposition to soil conservation programmes was more than merely denial of the existence of soil erosion, their opposition also reflected the pressures of loans, mortgages, subsidies and

government production rates. Soil conservation was also perceived to not provide any benefits in the short term to farmers (Anderson, 1980). This opposition in general was strong enough to slow the enactment of any national level strategy.

The Emergence of Soil Conservation Legislation

A number of events combined to increase public and government interest in soil conservation. During the early 1930's, Lance McCaskill, a soil conservator from Lincoln College, visited and studied the work of soil conservators in the American mid-West. McCaskill related their situation of severe soil erosion to the growing evidence of significant erosion problems in New Zealand. On returning to New Zealand he began to convince others that soil erosion in New Zealand was serious and required a soil conservation programme (McCaskill, 1973).

The Esk Valley flood of 1938 along with other flooding and soil erosion events around this time had a huge impact on land and soils in the Hawke's Bay and East Coast regions. These flooding and erosional events increased the growing realisation beyond that of experts that land clearance, soil erosion and flooding were linked. This created the catalyst for New Zealand's first attempt at integrated catchment management (Ericksen, 1990; McCaskill, 1973). These events enhanced the need for a national government response to soil erosion and flooding.

Influential scientific papers by Taylor (1938) and Zotov (1939) on erosion in the North and South Islands helped increase scientific understanding (Ericksen, 1990). Another influential person was Kenneth Cumberland, a geographer at the University of Auckland, who stimulated public debate through scientific publications as well as giving public lectures and distributing newsletters on the serious extent of soil erosion (Anderson, 1980). Pressure from the Royal Society of New Zealand helped establish a committee of inquiry in 1938 to investigate soil erosion problems (ibid).

This period of realising the extent of soil erosion was also derived in part from international stimuli. Soil conservation precedence was set in North America, who by the 1940's were emerging from what has been named as the 'dust bowl era.' Soil

erosion was also seen as a significant problem in Australia from the 1930's onwards. The resulting publicity from these two countries' problems and responses, helped change and form the attitudes of both the public and scientific community within New Zealand (Mather, 1982).

The 1938 Land Deterioration and Soil Erosion Committee recognised the importance of catchments as functional units and the interrelationship between land use, vegetation cover and river behaviour. Recognition of these relationships led to the drafting of the Soil Conservation and Rivers Control Bill. The Bill, vigorously debated by politicians, individuals and public interest groups, resulted in the enactment of the 1941 Soil Conservation and Rivers Control Act. The Act was responsible for reducing erosion and flooding through the promotion of conservation works and regulation (Jakobssen and Dragun, 1991). The 1941 Act introduced a new era of the "interventionist" approach that spanned the next four decades.

A vital development under the Act was the creation of the Soil Conservation and Rivers Control Council (SCRCC). The general functions of the council were to formulate policy and advise central government. Responsibility for catchment planning and management was delegated by the SCRCC to regional catchment boards, as shown in Figure 2.1 (Ericksen, 1990). The catchment boards were voluntary with the first board being established in the Manawatu in 1943. As catchment boards were not mandatory, they were slow to evolve and only emerged in those areas where people perceived they were needed. Thirty years after their introduction, catchment boards covered 80 per cent of the country (Ericksen, 1990; Roche, 1994a).

More specifically, catchment boards had a regulatory function where they were given the responsibility to restrict land use and prevent and control soil erosion. Landholders had to obtain approval from the catchment authorities before undertaking certain activities such as clearing land or developing roads. Catchment authorities could impose conditions on how land modifications could be carried out (Section 34, Soil Conservation and Rivers Control Act, 1941). Notices could also be served on individual land holders requiring work to be undertaken to prevent soil erosion and

flooding in water courses (Section 35, Soil Conservation and Rivers Control Act, 1941).

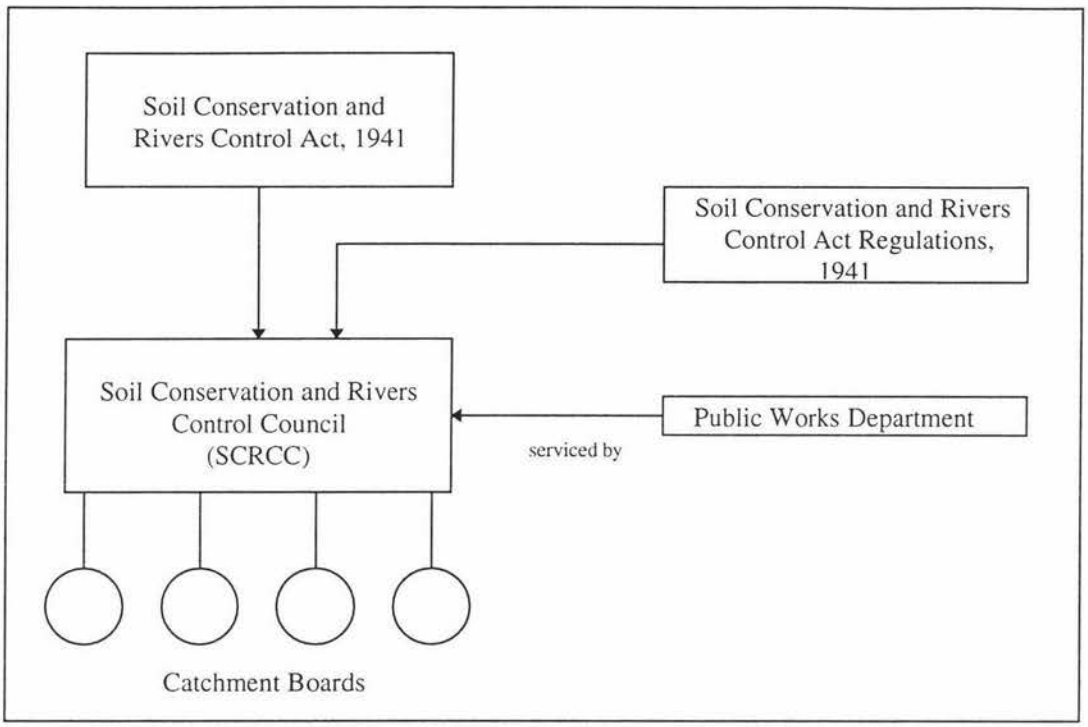


Figure 2.1 Organisation of Soil and Water Conservation 1941 - 1967

Source: Roche, 1994c, 19.

Most catchment authorities preferred to encourage conservation works which attracted government subsidies. Farmers were often given assistance to develop their better land as a trade-off for retiring their heavily eroded land or accepting restrictions on land. Subsidies were also given for afforestation or revegetation in hill country, tree planting and other on-farm measures (Jakobssen and Dragun, 1991).

At the time, the 1941 Act marked a radical departure from the previous era of freedom where land occupiers could use their land as they pleased. To some degree this reflected the end of the pioneering days and wholesale exploitation of the land (Mather, 1982).

Government and Public Soil Conservation Debate

Two opposing themes pertaining to soil erosion were evident in the expansionist and interventionist eras. The first was that of soil scientists, geologists and a few

agriculturalists who strongly promoted and sought to raise public and official awareness of the need for soil conservation. The opposing theme was one of denial of the existence of soil erosion, especially in relation to farming practices as its causation. The SCRCC faced an on-going struggle in persuading parts of the farming community and politicians of the importance of soil conservation (Roche, 1994a).

The SCRCC's powers to rate land also caused opposition from the farming community. An amendment was passed in 1948 to help overcome the rating classification problem in the 1941 Act. The SCRCC's education and publicity campaign was also unpopular as it identified poor farming practices as attributing to land degradation. Farmers considered that catchment boards had excessive powers which were detrimental to their economic livelihood. The Act was amended in 1959 to overcome some of these problems. The call for amendment demonstrated the publics' continued dissatisfaction with catchment boards. Powers were removed from catchment boards to regulate burning, vegetation protection and land use. These powers were reinvested with the SCRCC where farmers felt they had more influence. Catchment boards on the other hand considered that local interests could be best managed at this level rather than through a distant Wellington-based council (ibid).

The role of publicity, education and demonstration farms was seen by the SCRCC as the most effective way to persuade farmers to adopt better land use practices. Soil conservation works required more energy and finances for tree planting programmes, grading of banks, and terraces, various pasture techniques, conservation fencing, gully schemes and farm plans. Most were modifications of techniques used by the United States Soil Conservation Service (ibid).

The need for specific regional strategies for soil erosion problems was realised through the experimental data collected in the 1950's, where different types and rates of erosion around the country were shown to require different conservation techniques. In 1961 the SCRCC requested all catchment boards submit a five year plan, giving details of a programme of work encompassing ten per cent of the total soil conservation work required in their district. The five year plans highlighted the regional

variations in soil erosion problems as well as the differing rates of progress made by catchment boards (ibid).

Grants and subsidies were an important part of government intervention. Subsidies reflected the widely held belief by the rural community, that if the government wanted a private landowner to do something then it should pay them to do it (Clough and Hicks, 1993).

The Town and Country Planning Acts of 1953 and 1977 gave local bodies such as district and county councils, extensive powers to regulate land use through planning schemes, in order to ensure "wise use" of land. These powers were generally not used to control land degradation, as they were unpopular with landowners (Clough and Hicks, 1993). Control of land degradation was also perceived by local bodies to be the role of catchment boards.

Reassessment of Legislation

The 1941 Soil Conservation and Rivers Control Act was considered advanced for its time, but by the 1960's, issues of water quality, pollution and allocation had increased beyond the scope of the Act. The Water and Soil Conservation Act of 1967 was passed in an effort to meet the new requirements for water resources. The new Act built on the 1941 Act with a more comprehensive management framework, particularly with the creation of the National Water and Soil Conservation Authority (NWASCA).

The SCRCC and the Water Pollution Council (1953) together with a new Water Allocation Council were brought under the umbrella of NWASCA. The Authority and the three councils formed the National Water and Soil Conservation Organisation (NWASCO). Catchment boards were also reconstituted as catchment boards and regional water boards (Ericksen, 1990). These relationships are presented in Figure 2.2.

NWASCA had roles of giving administerial advice, review of the functions and performance of councils and regional water boards, control and guide of works and research, promotion of education and training as well as more specific functions.

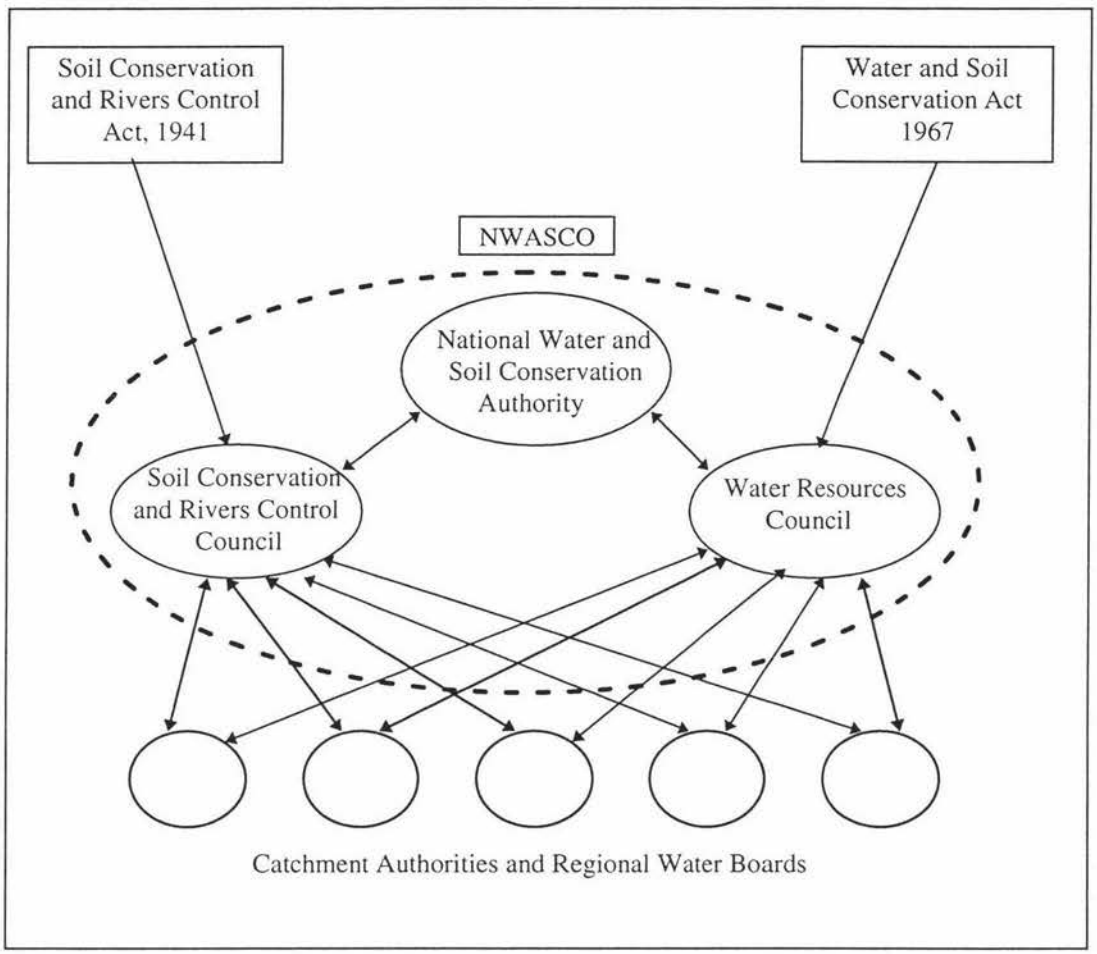


Figure 2.2 Administrative Structure under 1941 and 1967 Acts (1967-1984)
Source: Roche, 1994a,10

The period from the 1940's to 1967 reflected rapid growth and development for soil conservation. The work SCRCC had initiated and carried out was able to be extended through the 1967 Water and Soil Conservation Act. However, the SCRCC's efforts were hampered by the long standing influence of various commissions and government policies, failing to win over the rural community to the benefits of soil conservation.

Moves Towards Environmental Reforms

Towards the late 1970's, there was a call for the amalgamation of the 1941 and 1967 Acts. The complex nature of the two Acts often resulted in public confusion about which agency was responsible for what. The two principal pieces of soil conservation legislation, the Soil Conservation and Rivers Control Act 1941 and Water and Soil Conservation Act 1967 had been passed over 25 years apart with several amendments creating structural and administrational complexities. This incremental approach to soil and water conservation was reflected in a fragmented, two-tiered (national and regional) government administrative structure. The lack of overall co-ordination was prevalent in almost all forms of resource management, creating a need for widespread institutional and legislative reforms (Ericksen, 1991; Roche, 1994a).

The 1983 amendment to the Water and Soil Conservation Act was to some extent the closest action obtained in consolidating the two Acts, redefining the role of water and soil conservation. The 1980's also brought increasing attention to Maori issues in dealing with natural resources. Protests about the monocultural nature of existing legislation lead to Maori views being incorporated into government procedures. NWASCA included an appointed member to represent Maori (Roche, 1994a). A number of government commissioned reviews of the institutional and legislative arrangements for soil conservation arose out of criticism of soil and water administration and also changes in economic circumstances of the time and the responding policy initiatives of Treasury. These reviews preceded the approaches to the economic management reforms of the public sector.

The reforms of 1984 to 1987 were driven by the New Right ideology. This included underpinnings of monetarism, market liberalism and public sector reform. A key point of the re-evaluation of economic measures was to increase competition in order to encourage greater economic performance (Memon, 1993). In order to achieve this, the deregulation of production and financial sectors were initiated with the agricultural sector an obvious target.

In an examination of government expenditure, it was found that the rural sector was one of the most significant areas of government expenditure (Clough and Hicks, 1993). Treasury challenged soil conservation subsidy schemes, considering that the benefits were regional and therefore the costs should be met at that level. This fitted with the new Labour Government's general policy for as little direct intervention and economic protection as possible, in order to obtain greater competitive and economic performance (Memon, 1993). Attitudes towards conservation and the environment were also changing, with growing public awareness leading to political and bureaucratic recognition of "green" issues. Soil conservation was no longer seen as an issue to be tackled in isolation, but to be included in a more general concern for "land degradation" and "sustainable land use" (Clough and Hicks, 1993).

State departments and ministries were restructured. The Ministry for the Environment was created as the central government structure for administering environmental policies and overseeing operational functions (Ericksen, 1990). At the central government level, responsibility for environmental administration is also shared with the Department of Conservation and the Parliamentary Commissioner for the Environment.

The 1984 Labour Government's proposals for widespread environmental reforms also suggested that local government administration and legislative structures were unsatisfactory. In keeping with the philosophy of decentralisation and aims of greater efficiency, local government reforms and resource management law reforms were undertaken concurrently in the second term of the Labour Government (1987 - 1991).

Local Government Reform

As in other areas of environmental planning, soil conservation spanned across a number of territorial, regional and united councils, catchment authorities and various other ad hoc bodies. Weaknesses were seen in the conflicting and unclear objectives of the numerous authorities who often had overlapping functions. As a result, the main objectives driving the reforms were those of greater transparency of objectives,

competitive neutrality and internalisation of externalities, as well as taking into account local and regional community values and interests (Memon, 1993).

The Local Government Amendment Act (1989) amalgamated some 625 previous local government units into 74 territorial authorities (city and district councils) and 13 new regional councils. Provisions in the Act also allow for unitary authorities (a council having the functions, duties and powers of both a regional and territorial authority). Soil conservation, along with other land management functions were delegated to regional authorities. This reflected an economic premise of conducting environmental planning where information and skills are available and incentives are the greatest. The decentralisation of environmental planning was also justified as bringing decision-making closer to those affected by the decisions (Buhrs and Bartlett, 1993; Memon, 1993).

The underlying rationale for allocating functions within the new local government structure, was based on the principle of separating policy, service delivery and trading functions (Ericksen, 1993). By separating and clarifying roles within government, the reforms aimed to improve internal accountability. In order to avoid conflict between policy and service delivery roles, policy was seen as the primary role of regional council, and service and trading functions that of territorial authorities (Memon, 1993).

Also central to the reforms was the 'new' ideology of the market as a co-ordinating mechanism of the economy. This was reflected in the widespread deregulation and introduction of user pays philosophy. The reforms helped change the view of soil conservation as purely a government responsibility, moving a great deal of the cost and responsibility directly onto the land user and regional taxpayer.

Resource Management Law Reform

Allied with the local government reform was the resource management law reform. The reforms were closely co-ordinated with a single ad hoc Cabinet committee responsible for both. In following with New Right thinking, the law reform aimed at attaining legislation that was 'principally enabling', providing purpose and

responsibilities for the recently restructured local government authorities (Buhrs and Bartlett, 1993; Memon and Gleeson, 1995).

By the mid 1980's, some 70 statutes existed for environmental planning and management. These statutes were often perceived as being fragmented, overlapping and inconsistent (Memon, 1993). A sweeping review of these statutes resulted in their repeal or amendment and being replaced by the all encompassing Resource Management Act. The Resource Management Act, enacted October 1991, signified the beginning of a new approach in dealing with environmental issues in New Zealand. The fundamental basis of the Act is the principle of sustainable management, derived from international sources, such as the International Union for Conservation of Nature and Natural Resources' (IUCN) 'World Conservation Strategy' (1980) and the Brundtland report - 'Our Common Future' (World Commission on Environment and Development, 1987).

The enactment of the Resource Management Act is recognised as one of the most integrated approaches to management of natural resources in the world (Buhrs and Bartlett, 1993). The Act "in most respects, however, is not a revolutionary departure for previous law as it builds, for example, on the Water and Soil Conservation Act 1967" (Buhrs and Bartlett, 1993,121).

Integrated resource management is seen as an important technique in achieving sustainable management. In replacing more than 70 statutes with a "single coherent framework," the Act provides for the comprehensive integration of management objectives for land, air, water and minerals (Buhrs and Bartlett, 1993,133). A hierarchy of policy statements and plans with a strong emphasis on the systematic approach to decision making also provides for integrated management at the regional level (Buhrs and Bartlett, 1993; Memon and Gleeson, 1995). The Resource Management Act provides the functions, powers and duties for central, regional and territorial authorities. The Act shifts the emphasis of land use planning from prescribing permitted uses to managing adverse effects.

The Resource Management Act and Soil Conservation

Although the underlying philosophy of the Resource Management Act is based on the principle of sustainable management, its content has largely been drawn from previous legislation. In the case of land management and particularly soil conservation, the 1941 Soil Conservation and Rivers Control Act and the 1967 Soil and Water Conservation Act were the major contributing statutes.

Particular elements have been carried through into the new legislation. Under the 1941 Soil Conservation and Rivers Control Act, section 34 notices required land holders to obtain approval from a catchment board before undertaking certain activities, such as clearing land. Catchment boards could then impose conditions on how such land modifications were to be carried out (Jakobssen and Dragun, 1991). The Resource Management Act provides for the continuation of section 34 notices, enabling regional councils to limit activities on prescribed areas of land prone to erosion. Section 34 notices were included as part of the regional transitional plans*. Regional councils that included a s34 notice provision in their transitional plan, were also deemed to include a similar regional rule serving the same purpose of s34 notices (s369(5)(a) Resource Management Act, 1991) (Milne, 1992).

Under section 30 of the Resource Management Act, regional councils are charged with the primary responsibility for management of water and soil resources, along with other natural resources. Soil conservation is listed as a regional council function for the control of the use of land (s30(c)(i), however, it is not defined. This leaves its interpretation in the hands of regional councils. This lack of specific directive is consistent with the Act's limited provisions in providing few explicit incentives or penalties, few concrete or specific policy directions and few action-forcing mechanisms to direct government at any level (Buhrs and Bartlett, 1993, 133). This regime allows for a great deal of flexibility and innovation to be taken by local government. Although no specific provisions are made for soil conservation, regional councils are able to

* Transitional Plans were used in the period between the enactment of the Resource Management Act until regional policy statements and regional plans came into operation, under s368, Resource Management Act, 1991.

address specific soil conservation issues through regional policy statements and more specifically regional plans.

The Soil Conservation Function of Central Government Agencies

Under the previous 1941 and 1967 Acts, soil conservation functions were directed from a central government position. Roles such as research, information gathering and dissemination, advice and co-ordination of other government departments through the SCRCC and NWASCA were undertaken. These roles have largely been absorbed by the Ministry for the Environment. Crown research agencies such as Landcare Research have taken on the role of research and information gathering.

The Resource Management Act gives the Ministry for the Environment the principal role of overseeing and monitoring the functions of the Act. The Ministry for the Environment has legislative responsibility to consider the future direction of soil conservation activities. Its mandate is derived from the Soil Conservation and Rivers Control Act, 1941 and the Water and Soil Conservation Act 1967 (Makin et al., 1991).

The responsibility for environmental policy has largely been delegated and decentralised from central government through the Resource Management Act. It has, however, not necessarily been devolved, as ultimately power and authority are still reserved by central government for itself (Buhrs and Bartlett, 1993). Central government can formulate national policy statements and national environmental standards. Their purpose is to promote sustainability by providing for matters of national importance (s6), affecting all land, air and water where relevant to achieve the purposes of the Act (Milne, 1992). National policy statements and environmental standards are binding on regional and local government and are expected to give direction to regional and local councils. At present no such guidelines are available for soil conservation or land management.

The Ministry of Agriculture and Fisheries has little statutory role under the Resource Management Act. It is however in a position to make submissions and objections to plans formulated by local government under the Act. Its potential roles include the

monitoring of sustainability issues within the farming industry and involvement in the design and delivery of assistance measures, particularly in adverse events relief (Clough and Hicks, 1993).

The Soil Conservation Function of Regional Councils

The Resource Management Act gives regional councils their main functions, duties and responsibilities. Section 30 provides the main mandate for regional control of soil erosion. Functions, duties and responsibilities are also prescribed under the Agricultural Pest Destruction Act 1967, Noxious Plants Act 1978, Soil Conservation and Rivers Control Act 1941, Harbours Act 1950 and the Marine Pollution Act 1974. The relationship between central and regional government and the Resource Management Act is illustrated in Figure 2.3.

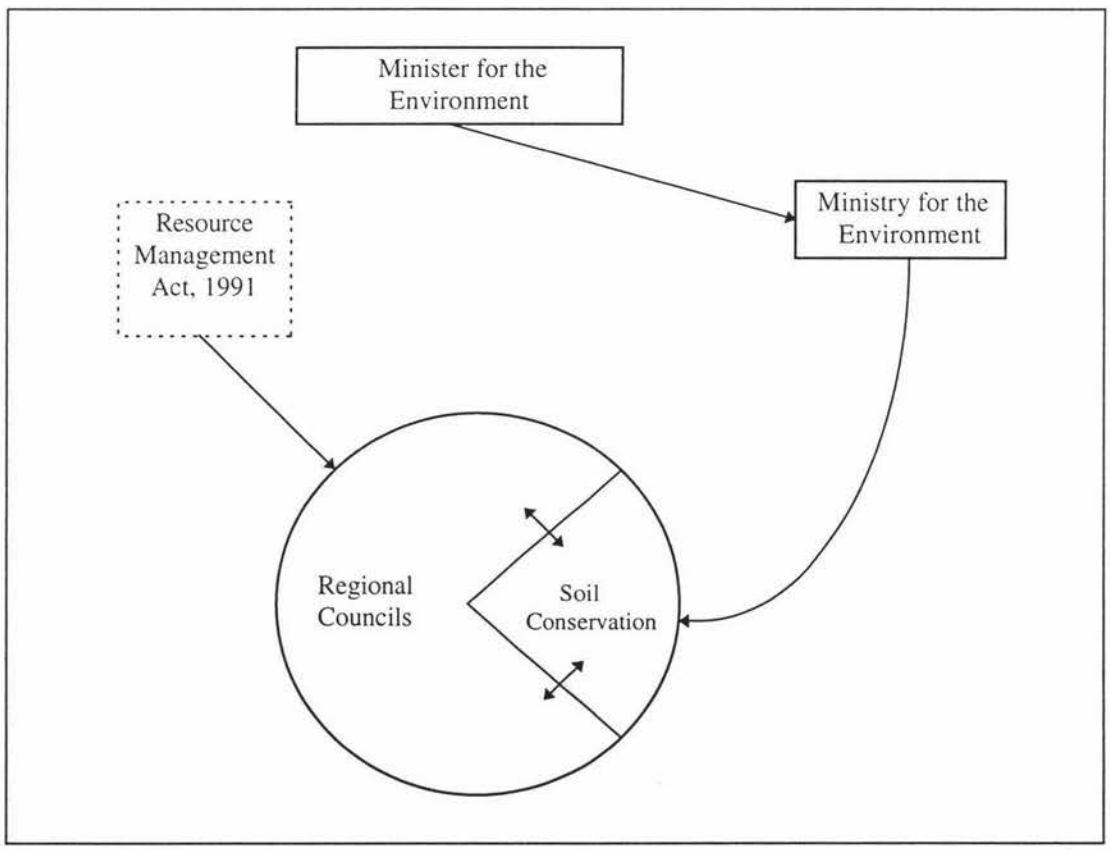


Figure 2.3 Organisations for Soil Conservation, 1991.

Source: After Roche, 1994c, 37.

Three main types of control for soil and land management at the regional level are given under the Resource Management Act: - regional policy statements, regional coastal plans and regional plans. The Second Schedule of the Act describes which matters are regional in respect to policy and plan formulation.

The Act outlines matters to be considered in regional plans and policies, (s61, 66, 74). Mandatory regional policy statements (s59 - 60) serve to provide an overview of resource management issues of each region and to integrate the regional and district management of natural and physical resources. They include the establishment of objectives and methods, along with policies for anticipated environmental results and mechanisms for monitoring. They also outline matters to be addressed by regional, coastal and district plans.

Regional plans contain detailed provisions relating to issues identified in the regional policy statement. Their purpose is to assist regional councils in addressing specific resource management issues. The plan may apply to the whole or part of a region. Regional plans offer the greatest scope in planning for soil conservation functions within a particular region.

Strong direction and instruction for soil conservation has previously come from central government. Within the new resource management framework, central government has delegated almost all land management functions to the regional level. The removal of funding requires regional councils to prioritise and allocate resources on a regional basis. This is achievable through the issue-focused regional policy statements. This may result in their content, and hence responsibility and commitment, varying greatly within regions (Elliot, 1992).

In the area of plan and policy formulation, central government (particularly the Ministry for the Environment) has avoided providing specific direction for regional councils. It argues that to do so would compromise flexibility and inhibit innovation (Ericksen, forthcoming). This position can be advantageous in allowing councils the freedom to prioritise issues and resources on a regional basis, but it has also to some

extent allowed councils to do as little as the commitment or resources permit and perhaps not embracing the full responsibility intended under the Act.

Strong private property rights continue to play a significant role in land management and soil conservation. Over time landowners have successfully guarded their assumed right to make land utilisation decisions unencumbered by what was sometimes perceived as excessive regulation. Government had also been seen to support these rights through various land development and production policies. The Resource Management Act addresses property rights in relation to natural and physical resources and the conditions under which these are to be exercised. The Act, to some extent, reinforces the traditional New Zealand values of private property ownership with planning being essentially market-led (Memon, 1993). In the case of regional councils, private property rights limit the influence councils can have on changing land use or restricting unsustainable land use practices (Beanland, 1992).

The move towards sustainably-based integrated management as required by the Resource Management Act, falls more heavily on regional councils as it is their responsibility to achieve this in relation to regionally significant resource management issues. Integrated management offers benefits of efficiency and convenience and was seen to be more easily obtainable at the regional level. How this is addressed depends on how regional councils interpret the requirements of the Act and their understanding of the nature and importance of policy and plan formulation (Elliot, 1992).

The 'free market'-orientated reforms introduced the concept of user pays into government bodies. The aim was to decrease government expenditure on services by charging for them wherever feasible and also putting as many activities as possible onto a commercial basis. Regional councils are now directly responsible for determining charges and collecting them. The regional funding of regional councils has direct benefits. It provides independence from central government as well as ensuring their accountability to regional rate payers. This, however, may prove to be detrimental to soil conservation as the allocation of funding will be prioritised according to community perception of what is important and the consequent funding made

available. Regions with a restricted rating base (due to a small and or less affluent population) will also be disadvantaged under the regional funding regime.

Conclusion

From the time of original land settlement, agriculture had been seen as an important sector of the New Zealand economy. Government policy and guidance has been paramount in directing and supporting this industry. Successive government administrations have also served to confirm and reinforce this pastoral and economic ambition. This legacy has had a very influential effect on the development and success of soil conservation.

The institutional arrangements for soil conservation that existed up to the reforms have largely developed during the period of economic development and expansion. The interventionist approach of subsidising works for soil conservation between 1941 and 1989 has only been partly successful in achieving its goals due to its reliance on voluntary compliance by land owners and the nature of the assistance and direction given. In retrospect this approach has also served to some extent in undermining the efforts of soil conservation planning (Clough and Hicks, 1993; Ericksen, 1990).

The environmental administration and legislative reforms signified a radical restructuring of the historically long-standing role of the state as a development agent (Memon, 1993). These bold reforms have created an environment of devolved responsibility and leadership from central government, leaving regional councils to determine their regions need for soil conservation. Despite specific legislation and organisations such as the SCRCC and NWASCA previously guiding and giving statutory backing to soil conservation, the Act does not have any specific directives for soil conservation. The Resource Management Act's focus is turned to that of integrated management, of which soil conservation is a component of sustainable land management. This lack of specific directives leaves regional councils in a somewhat flexible position to allocate as much or as little priority and resources to soil conservation as desired. The future of soil conservation will now depend on how the

opportunities provided under the Act are taken up by regional councils and how central government fills the policy gaps and ambiguities that arise.

While this chapter has traced the evolution and development of soil conservation in New Zealand, the next chapter (Chapter Three) reviews the theoretical underpinnings of soil conservation at an international level. An ideological framework of principles and motivations underlying soil conservation is constructed to show how and why soil conservation has changed over time.

Chapter Three

PARADIGMS IN SOIL CONSERVATION

Chapter Three examines the principles and motivations underlying the approaches taken towards soil conservation. These principles create an ideological framework for constructing management regimes. The principles and motivations may include concepts about economics, polity, core (moral) values, knowledge and nature. These notions grouped together give us the concept of a paradigm.

The first half of Chapter Three reviews the theoretical underpinnings of the 'dominant western social paradigm.' These underpinnings along with elements of Keynesian economic thinking are discussed in light of their influence on particular soil conservation approaches. The latter half of the chapter describes a fundamental change in approach to soil conservation recognized as the 'new environmental paradigm.' Techniques under this paradigm ascribe to a neo-classical economics mode of thinking and are detailed with examples of how soil conservation techniques have changed. The concept of sustainability and integrated management, as an extension of the environmental paradigm at a global level, are discussed. The material is organised into the two main paradigms to allow the changing management approaches and techniques to be contrasted and compared for similarities and outcomes.

Paradigms

The literature shows two distinct paradigms, the 'dominant western social paradigm' and the 'environmental paradigm' to be prominent in determining the stimulus and motivation for soil conservation on an international level. These concepts apply particularly to western countries. Each paradigm is influential in setting up a framework of basic principles that drive particular policy and practical measures. The traditional approach to soil conservation, is driven by the 'dominant western social paradigm' (forthwith referred to as the dominant paradigm). The dominant paradigm describes a society's most fundamental or pervasive 'world view'. This paradigm has dominated management regimes up until the middle of the twentieth century, until it

was challenged by environmentalism or the 'new environmental paradigm'. These two paradigms present a conflict in their fundamentally divergent ideologies. The concept of a paradigm shift is used as it is useful in understanding the root of the differences in approaches and techniques use for administering soil conservation during these two different eras.

As the underlying tenets of the paradigms are investigated, an opportunity is provided to evaluate the motivations and consequent results in obtaining soil conservation objectives. For example, early approaches and attitudes to the environment were driven by anthropocentric or human centered goals, often resulting in the severe detriment of natural resources. A paradigm shift towards more ecocentric or environment-valued decisions has been hailed as an improvement in managing and protecting natural resources. The change in environmental values is seen in the approaches and techniques currently used and the relative success determined through the achievement of soil conservation goals.

The Dominant Western Social Paradigm

The dominant paradigm makes assumptions about how people (particularly those in western countries) view the world and act. This paradigm can be used to explain the conventional aspects of agricultural practice that have dominated since early times.
Four basic tenets of the dominant paradigm have been made by Deval and Sessions (1985, 42-43). These are;
"people are fundamentally different from all other creatures on earth, over which they have dominion; people are masters (sic) of their own destiny, they choose their goals and learn to do whatever is necessary to achieve them; the world is vast and thus provides unlimited opportunities for humans; and the history of humanity is one of progress, for every problem there is a solution, and thus progress never need cease" (Ericksen, 1991).

The dominant paradigm presents a positivist view where knowledge is derived from objective and empirical scientific study. As a result, natural resources were predominantly seen as tangible elements necessary for the production of basic

commodities. The onset of industrial expansion and new technological prowess allowed for greater resource intensification. This period was reinforced by a faith in science and technology and the commitment to economic growth (O'Riordan, 1971). Conventional agriculture can be seen to reflect all the core values of this paradigm where it is defined as "capital intensive, large-scale, highly mechanized agriculture with monocultures of crops and extensive use of artificial fertilizers, herbicides and pesticides, with intensive animal husbandry" (Knorr and Watkins, 1984, x, in Beus and Dunlap, 1990).

Agrarianism has followed a similar path of industrialism was closely linked with the industrial revolution. The intense use of land driven by industrialism and materialistic goals led to the overuse and exhaustion of the land (Hayes, 1987). The soil conservation movement arose in response to these external problems of severe land degradation and soil erosion. Common to all early soil conservation programmes was the desire to sustain ever-increasing economic growth, particularly as the agricultural sector was a core producer of many countries economy. Whilst writers and scientists warned about the severe long-term problems of persistent erosion, it went largely unnoticed with primary focus given to the anthropocentric problems caused by soil erosion, such as the fall in farm incomes and the reduction of agricultural exports (Phipps et al., 1986).

The United States government were the innovators of soil conservation, with early adopters being other British colonies such as Southern Rhodesia, Australia and New Zealand. In many countries, particularly those of colonial influence, an attitude of vast 'unlimited' resources available for exploitation prevailed. In these countries, the state set an early pattern of development of natural resources that was strongly reflected in each countries' economic and political institutions (Doyle and Kellow, 1995; Hudson, 1985).

The economic regimes of most western governments from about the 1930's to the 1970's was a major cornerstone in pursuing the goals of the dominant paradigm. Keynesian economic thinking and welfarism underpinned much of the economic and

social policy of these times. Keynesian economic management sought to reduce economic fluctuations and thereby sustain economic and income growth (McDermott, 1995). In doing so, many policies employed a great deal of government intervention, particularly in taking responsibility for the management of economic growth (Eatwell et al., 1987).

The need for intervention in the United States, where severe soil erosion, dust storms and falling agricultural prices in the 1930's, prompted the government to pass legislation to support farmers' incomes, reduce production and to limit soil erosion (Phipps et al., 1986). The United States Soil Conservation Act 1935, provided finance to pay farmers for voluntarily shifting acreage from soil depleting surplus crops into soil conserving grasses (Rasmussen, 1982). Both Australia and New Zealand also adopted similar regimes of voluntary soil conservation programmes, offering subsidies and other financial and technical incentives for the adoption of soil conservation behaviours.

A significant part of Keynesian style management is the centralisation of planning and decision making. This centralised structure allowed a high degree of state control and intervention to be easily applied and retained. The centralised nature of soil conservation management was seen in the top-heavy central government departments of many western countries, who had autonomy over much smaller regional and local extensions of the conservation organisations (Selsky et al., 1994). Consequently directives from central governments were fairly uniform and often not regionally applicable.

The application of science and technology also played a large part in the soil conservation movement. Technological advancement was seen as a limitless tool used to improve prosperity and overcome any obstacles that the environment may present (Ericksen, 1991). A reliance on technology was consistent with many conventional agricultural practices which depended heavily on numerous farm inputs, energy sources and agribusiness sources. Most conventional agriculturists to whom the soil conservation programmes were targeted, viewed the trend of greater use of inputs and

technological advancements as evidence of progress in the agricultural industry (Beus and Dunlap, 1990). Extension agencies also relied on scientific endeavours and technological innovations as their main tools in assisting farmers.

Approaches and Techniques Employed Under the Keynesian Economic Model

A number of techniques were employed under Keynesian economic thinking, including economic development planning. Economic development planning promoted the involvement of the state in various areas of economic enterprise, of which the agricultural industry was a primary one. In order to generate the desired economic activity, governments regulated market conditions through such means as providing protection (tariffs and import quotas) against foreign competition. A wide range of subsidies were also used to assist the export sector, including guaranteed prices; subsidized capital; subsidized research and development; extension services; favorable tax treatment and direct financial incentives to extend or maintain output. The "late Keynesian" period in New Zealand was marked by the extensive agricultural support schemes. These reflected the state of centralised and technocratic planning and decision making (McDermott, 1995).

This direct support approach continued in many countries through until the late 1960's. Such programmes fundamentally ran contrary to soil conservation ideals as the economic policies of the day pushed development into environmentally sensitive areas, allowing agricultural expansion on to erosion-prone soils.

Through the use of legislation, soil conservation policies have to a large extent used two techniques; - regulation and voluntary programmes. Regulation encompassed any administrational measure taken by government that was backed by law. This approach was very characteristic of centralised authoritative government structures of the time (Jacobs, 1991; Phipps et al., 1986). Because the regulatory measures frequently lacked non-compliance penalties, it often rendered them ineffective (Vanclay, 1992).

Traditional practice of land and water conservation has focused almost entirely on erosion of the biophysical phenomenon and associated technological and structural

solutions. Linked to this technological approach has been the concept of extension - the "linear transfer of technology from experts to land holders" (Woodhill et al., 1992, 265). This model often prevented landholders being actively involved in identifying land degradation problems or solutions, resulting in limited ownership and responsibility for the problem. Other features of the linear model of extension include a tendency for extension officers to operate as 'experts' which often devalues farmer-based knowledge and innovation.

The traditional approach to addressing land degradation issues in Australia also emphasized the development and extension of technical solutions to meet the needs of primary producers. Government programmes and assistance took the form of research, soft loans and concessions and subsidized plant hire. The approach was mainly aimed at the individual farmer (Pitt and Yapp, 1992).

Voluntary programmes were the most common mechanism used despite the fact that such an approach ran contrary to Keynesian thinking. It was considered that in acting in their self interest, farmers would adopt a technology or particular practice. Voluntary programmes such as land retirement, terracing, conservation tillage, tree planting and other techniques, were frequently coupled with incentive schemes. The most significant were economic incentives such as subsidizing or guaranteeing of prices (Swanson et al., 1986). Voluntary programmes also used elements of encouragement and persuasion, delivered mostly via the educational component of programmes. It is doubtful that voluntary programmes actually brought about the desired levels of protection due to the private costs incurred in doing so (Brubaker and Castle, 1982; Phipps et al., 1986).

Voluntary programmes on occasions have served purposes other than for soil conservation, such as becoming an instrument for dispensing financial help to individual farmers. However, although all programmes promoted good stewardship of the land, no indication was ever made that farmers should go beyond their own interest in contributing to conservation practices. This prevailing ethos that everyone is to act

in their own interest, was seen as acceptable under conventional economic and social assumptions (Brubaker and Castle, 1982).

A concern for education joined the conventional technical approach in the development of soil erosion control strategies. These elements were not entirely new as education had been introduced in the 1930's (Napier, 1987). Educational programmes were mostly used to help reduce information and knowledge gaps and to complement other strategies (Easter and Cotner, 1982). Because of the strong emphasis on technical expertise, centralised government bodies were the main deliverers of these programmes.

Many barriers to adoption of conservation techniques have been highlighted over the years. It has been continually demonstrated that the adoption of what might be described as environmentally sound practices is usually because of the commercial reasons, rather than environmental reasons. For example, the technique of minimum tillage is adopted due to labour and energy savings, and deep-rooted perennial species have been adopted due to their cost effectiveness rather than for their soil binding properties (Vanclay, 1992). Most research outlines factors of farm economics; the risk and uncertainty of adopting programmes; the implementation costs and initial capital outlay; the loss of flexibility in being able to respond to changing economic and climatic conditions; barriers within the physical and social infrastructure; and farmers personal perception of environmental problems in preventing and restricting adoption of soil conservation programmes (Napier and Cambori, 1988; Vanclay, 1992).

Consequences of the Dominant Paradigm Era

The soil conservation movement tended to reflect the reactive stance of governments to external stimuli - such as the 'Dust Bowl' era in the United States. Conservation has also coincided with periods of economic anxiety where conservationists have been eager to reorganise economic activity, so as to assure the continued progress of economic well being (O'Riordan, 1976). With soil conservation policies aimed at obtaining economic and social control, a wide variety of subsidies and incentives were prevalent.

For most countries including the United States, Australia and New Zealand, no long range plans for resource management were written and multiple conflicting goals of economic growth and conservation often meant inconsistencies. The lack of co-ordination and conflict seen in most conservation programmes meant a piecemeal approach, exacerbated by the voluntary nature of programmes. Soil conservation was often used as a pretext to achieve other ends such as higher farm prices, with the importance of the conservation issue being obscured. In hindsight the soil conservation programmes of many western countries can be considered a disjointed incrementalist approach, resulting in little actual soil conservation being achieved (Allee, 1982; Doyle and Kellow, 1995; Morgan, 1965).

Hayes (1987) argues that the United States' soil conservation programme was seen as a successful example of federal action to cope with a major economic problem. The economic issues may have been solved in the short term, but little positive impact was made on the increasing environmental degradation.

The effectiveness of policy developed during this era was strongly influenced by the political and institutional surroundings of the time. As a result central government economic and social policies often pervaded soil conservation organisations and councils, influencing many of their conservation goals. It is generally considered that the allocation of funding and resources from a strictly centralised state were not well targeted, especially as soil erosion problems still exist after years of large investments into conservation programmes (Napier, 1987; Seitz, 1982).

The conservation movement can be seen as an effort on the part of leaders in science and technology and governments to bring about more efficient development of physical resources (Hayes, 1987). For agriculturists it made sense to apply conservation techniques to farming in order to obtain efficiency of production. Although it was recognized that agriculture was having a negative impact on soil and water, erosion was considered a component of agriculture production, where the cost of controlling it had to be considered in relation to the returns on production. This reflected the short term thinking typical of that era (Beus and Dunlap, 1990).

In retrospect, the influence of the dominant paradigm thinking and Keynesian economics have instructed an inappropriate model of approaches and techniques for soil conservation, where adoption of them has failed to deal with the issues as the farmers perceive them, especially in terms of environmental issues. The structure of the agricultural industry has tended to dictate the behaviour and practices of land users where maximum short-run profits are chosen at the expense of land and resource protection. The economics of agriculture are also not conducive to adopting soil erosion control practice as the returns to investment in conservation are low and are usually not realised for years.

The Rise of the Environmental Paradigm

After the second world war, extensive changes in human values led to considerable change in the way the environment was perceived. A fundamental challenge to the status quo came from a realisation that the exponential growth of the world's population was pushing human society beyond the capacity of the earth to sustain it (Doyle and Kellow, 1995). Environmental publications such as Rachel Carson's 'Silent Spring'(1962) contributed dramatically to increasing awareness of the ecological state of the environment. Other writings such as Ehrlich's 'The Population Bomb' (1968), the Club of Rome's 'The Limits to Growth' (1972) and Goldsmith's 'Blueprint for Survival' (1972) helped fuel the challenge as well as indicating the increasing awareness of environmental issues within the scientific community.

The emergence of these issues into the public arena can be termed the 'environmental movement'. The environmental movement is often thought to have its roots in the conservation movement of the twentieth century, however, various authors have shown that the origins of environmentalism are markedly different (Beus and Dunlap, 1990; Hayes, 1987; O'Riordan, 1976; Rose, 1991). The conservation movement was an effort on the part science and technology and governments to bring about more efficient development of physical resources, whereas the origins of the environmental movement was far more widespread and diverse. Environmentalism emerged from a broad urban base initially motivated by the concern that technology and population growth were having deleterious effects on the environment and on the quality of life

(Hayes, 1987). New values sought under the environmental movement spanned through to issues of helping the developing countries poor, the emancipation of women, as well as a very wide range of ecological issues (Pepper, 1991).

Environmental quality came to have a considerable personal meaning. Initial themes of the environmental movement focused on the finitude of mineral resources, problems of uncontrolled growth of the world's population, effects of pesticides on ecological systems and the growing scarcity of wilderness and other natural areas (Phipps et al., 1986). Environmentalists began to challenge the prevailing order of the past several decades, introducing new ways of thinking and relating, endeavouring to create a shift in the dominant mode of thinking.

The environmental paradigm refers to the way people were beginning to perceive and interpret the natural environment and their relationship within it. The main notions of environmentalism outlined by Ericksen (1991) include; - A high valuation of nature; compassion towards other species, other people and future generations; a desire to plan and act so as to avoid risk to humans and the natural environment; the recognition that there are limits to growth to which humans must adapt; and the desire for a new society that incorporates new ways of conducting economic and political affairs. The environmental movement renewed support and enthusiasm for land management. The need for control of soil erosion was again brought to the attention of governments, but this time by an active urban public who had begun to take an interest in rural issues.

In the literature, a wide range of perspectives and commitment to the environmental movement is expressed. Some writers claim that the emergence of 'ecology' as an academic discipline encouraged the development of environmentalism. This branch of science studies the relationships of plants and animals with each other and with their non-living environment (Simmons, 1986, 116, in Ericksen, 1991). Ecology stresses a holistic approach to problems, where holism rejects the idea of separating humans from the rest of nature. The principle of holism also requires social, economic, political and environmental issues to be brought together for policy and decision making. This new thinking had implications for soil conservation practice, where previously it had been

dealt in isolation. However, support for a more holistic approach forced policy and decision makers to consider other factors than the readily observable physical problems. In terms of soil conservation this perspective allowed social and economic issues (such as farm economics) to be viewed in relation to environmental outcomes.

Environmental Economics

A major feature of the environmental debate is acknowledgment of the role economics plays in analysing the causal processes of environmental decay and in formulating policy (Helm and Pearce, 1990). Although many environmentalists have rejected the whole subject of economics on the grounds that economic theory fails to acknowledge the environmental basis or consequences of economic rationality (Papadakis, 1993), others demanded that an environmental perspective be integrated into economic policy. For soil conservation this meant finding the true cost of eroding soils and land degradation. Environmentalists also gave importance to the quantity and quality of natural resources available for future generations.

Most work undertaken in the area of environmental economics can be described as an attempt to incorporate the environment into conventional or the neo-classical framework of economic analysis. Because environmental resources are usually available free, their value generally goes unrecognized, the result being overuse and consequent environmental degradation. Neo-classical economics bases a great deal of its policy around the notion of economic efficiency. For example, when monetary value is placed on the environment, it is able to be included into economic analyses such as cost-benefit analysis. Through ascertaining the real value of land, the worth of soil conservation could be more accurately calculated.

The neo-classical economic ideology creates a new managerial framework. It views government intervention as an intrusion into voluntary agreements between individuals. This, in turn, distorts the efficient functioning of the market and hence the efficient allocation of resources. The legitimate role of government is seen as being minimal, where it only provides a legal framework, national defense and a minimal range of other public goods which the market may fail to produce (Grundy, 1994). This change

in institutional structures called for by the new paradigm, enabled a new framework of decentralized, deregulated management, allowing greater public involvement and participation as was being strongly advocated by the public.

In many countries, those involved in soil conservation were also beginning to realise that governments could not solve the environmental degradation problems alone and that land users must be involved to the point where they began to assume the responsibility for managing natural resources (Campbell and Junor, 1991). At this stage soil conservation as a practice, lost specific focus and was incorporated into the broader concern of land degradation in general.

With increasing public interest in environmental issues, the amount of money spent on soil conservation programmes (particularly those in the form of financial incentives and subsidies) was challenged. Interest also increased in the conservation programmes themselves and the achievements or lack of, that had been gained. After almost fifty years of soil conservation, the problems of land degradation and soil erosion were still prevalent and continued to be a major issue for both individual land users and the wider community. Evidence indicated that land users were aware of the problems, but due to the economic and market constraints they were often forced to place a higher priority on productivity and efficiency when deciding farming practices. Because short term survival becomes the primary factor in decision making, new approaches and mechanisms were needed to make it feasible for farmers to 'invest' in conservation (Swanson et al., 1986). This coupled with the new wave of thinking brought by the environmental movement created new opportunities and scope for alternative approaches to be introduced.

Approaches and Techniques under the Neo-Classical Economic Model

Under the environmental paradigm, technical solutions that had dominated past approaches were placed within a socio-economic context, where a social understanding of the phenomenon of land degradation was sought. Since the 1980's, soil conservation programmes and policies have moved towards this more 'people centered' management approach. The aim has been to develop and increase

participative approaches to land conservation, building within communities the understanding, commitment, knowledge, skills and resources to effectively participate in the long term process of dealing with land degradation and the related economic and social issues (Woodhill et al., 1992).

Citizen participation is a key concept where individuals are actively involved in the issues that affect their community and future well being. Here community members work with government agencies rather than abrogating responsibility and power to bureaucracies (ibid). This notion reflects an ethos of self help using local knowledge, experience and understanding combined with 'experts' perspectives to gain better results. Government programmes are considered ineffective and inefficient without the co-operation and support of community members.

Effective community participation is obtained through the empowerment of individuals. Empowerment enables adequate power, influence, responsibility and accountability and the necessary skills, abilities and resources to be available at a grass roots level. Empowerment has been considered by United Nations Commission On Environmental Development as the key to facilitating the participation of local populations (Bartelmus, 1994).

Many countries (for example, the United States, New Zealand, Australia and Holland) have undertaken major public sector reform in order to restructure their political, economic and institutional set-ups to provide the framework necessary to allow for new approaches and techniques to be implemented. Such restructuring has frequently seen the decentralisation of power, funding, resources, personnel and expertise to regional and local levels (Berke, 1994; Phipps et al., 1996).

Friedmann's social learning theory is also consistent with the devolution of power and decision making. Most planning theories use scientific knowledge as the basic 'building blocks', whereas social learning claims knowledge is derived from experience and validated in practice. It is a cyclical model which places emphasis on learning from experience through four stages which include; finding out about the situation or issue,

making sense of the information collected, deciding on a strategy for action, and lastly taking action (Friedmann, 1987; Woodhill et al., 1992). This planning approach promotes a 'bottom-up' strategy involving people primarily in small groups who promote changes in society through their own experience.

The social mobilization planning tradition also reflects a change in the dominant paradigm mode of thinking. This type of planning places primacy on "direct collective action from below" (Friedmann, 1987,73). This approach to planning links technical planning knowledge to processes of social transformation (Friedmann, 1987), reinforcing some of the new environmental paradigm concepts.

A good example of the shift in paradigms is the philosophical underpinnings of the social learning and social mobilization traditions found in the policy directives and practice of Australia's Landcare programme. In 1989, the National Australian government declared a 'Decade of Landcare', where great effort from all government levels as well as the private sector were employed to establish and foster Landcare groups throughout Australia. The Landcare approach involves local landholders working together to develop better land management techniques in order to resolve land degradation problems. Although Landcare is essentially a "grass-roots" approach it requires adequate central and regional government directives and funding. The Australian government has set up institutional arrangements to ensure the issues are rigorously thought through on a continuing basis and that there is some form of accountability where funding has been given (Bradsen, 1991; Campbell, 1991).

Within the environmental movement there emerged many advocates (mainly economists) for use of the incentive approach in controlling environmental behaviour, as opposed to those who favoured regulation. Economists argue that market failure is a primary indicator of environmental problems. However environmentalists generally insist that this is a simplistic generalisation and it is not reflective of the true value of resources.

Neo-classical economic approaches are driven by the 'free-market' philosophy where techniques such as environmental taxes use the mechanisms of the market to change behaviour (Jacobs, 1991). Techniques include input taxes; the polluter pays principle; direct conservation payments; pricing mechanisms - where governments are able to influence market prices where they are directly involved in resource management or assist particular activities such as Landcare or to encourage the use of particular inputs; taxes to discourage the use of particular inputs or to ensure that the full costs of their use are borne by the users; and income tax deductions or rebates - to provide targeted benefits to encourage a certain practice (OECD, 1993; Standing Committee on Agriculture, 1991).

Sustainable Development

The emergence of an alternative or environmental paradigm has not been restricted to the western countries. Concern about the earth's resources, their rate of degradation and the methods of tackling these environmental problems has gained global attention. This has been demonstrated in addition to the environmental paradigm where the concept of sustainability has emerged at a global level. The concept of sustainable development grew out of a realisation that development policies and environmental concerns are inseparable (Grundy, 1994). This concept now provides the focus and framework of the environmental agenda.

Sustainability is underpinned by a wide-ranging and rigorous body of literature. It is a holistic concept which spans across many theoretical debates including ecology, climatology, philosophy, sociology, economics and more. Generally the concept of sustainability represents awareness to, and the need to act as stewards of the environment on behalf of future generations (Evans, 1994). Voluminous amounts of literature surrounds this concept, displaying a wide range of interpretations of what this concept can mean in practice. A significant component of sustainable development is the recognition given to indigenous people and their knowledge and practices. Many programmes in both developing and developed countries provide for local knowledge to be included along with scientific research.

Many international forums and agreements have been entered into in recognition of the need for global sustainability target setting. The World Conservation Strategy introduced the concepts of global sustainability in 1980, detailing the issues and complexities for the present and future well-being of both the environment and humans (The World Conservation Union, 1991). Other international documents such as Our Common Future (1987), Caring for the Earth (1991) and Agenda 21(1992), also focus on the central theme of sustainable development. Each constructs a framework for fully integrating social, economic and environmental policies to enable individual countries to adopt the recommendations at local, regional and national levels. 'Our Common Future' written by the World Commission on Environmental Development, attempts to create new structures that will facilitate the integration of environmentalism into the entire policy making process (Papadakis, 1993), proclaiming sustainable development to be the central goal of economic policy (Jacobs, 1991).

Agenda 21 is one of the key results from the 1991 'Earth Summit' - The United Nations Conference on Environment and Development. The document is intended as a blueprint for action in all major areas affecting the relationship between the environment and the world's economy (Milne, 1992). Agenda 21 devotes an entire chapter to sustainable agriculture, making recommendations in regard to sustainable land use. Management principles also advocate the decentralisation of decision-making though the creation and strengthening of local organisations and developing a framework that provides incentives and motivations for sustainable and efficient farming practices (Lang, 1994).

Sustainable Development Approaches and Techniques

The techniques reflective of the environmental paradigm have been extended to incorporate principles of sustainability. Policy makers in many countries are setting environmental standards and targets in accordance with global recommendations. Various environmental indicators and monitoring programmes are being implemented in order to record and grade the impact of activities within the environment. Regulation or other forms of intervention are being used in conjunction with these

techniques in order to enforce standards and meet the set targets. Regulation is still considered the most useful approach as a reinforcement for other environmental instruments (Jacobs, 1991).

Recognition that reform within the agricultural industry is necessary for improved outcomes can also be seen in the General Agreement on Tariffs and Trade (GATT) negotiations. The various GATT rounds aim to link agricultural trade policies with developing environmental indicators for agricultural policy and information (OECD, 1993). All of these international commissions and reports reflect a genuine recognition of the validity and enthusiasm for much of the environmental agenda.

Most countries have to varying extents taken up the challenge of incorporating the notion of sustainability in their own policies and decision making. New Zealand proves to be at the forefront of such moves through its enactment of the Resource Management Act, which promotes sustainable management as its primary goal. The United States has also taken similar measures through the 1985 Food Security Act. This piece of legislation contains the strongest environmental component of any farm bill and demonstrates the United States government's trend of decentralizing policy through the delegation of responsibility and the creation of new private markets. The Food Security Act provides a blend of incentive-based programmes (using cross-compliance) and voluntary programmes (such as conservation reserves) to address fundamental conservation and environmental goals (Phipps et al., 1986).

In many countries, soil conservation has been incorporated into the broader concept of sustainable land use. Other techniques such as Total Catchment Management, adopted by the New South Wales government puts land use and soil conservation into a holistic perspective with respect to other land uses. Integrated Catchment Management has similar objectives. The United States version is a programme called LISA - Low Impact Sustainable Agriculture. Other techniques are also being formulated in order to better fulfill the principles of sustainable development. The less regulatory and more managerial environment means a greater flexibility can be afforded in formulating and implementing site-specific techniques.

Conclusion

This chapter has drawn on the two main paradigms of the last century to show how the dominant underpinnings of soil conservation have changed over time. As these shifts have occurred, the approaches and techniques have correspondingly changed in order to better achieve new goals. Although the two paradigms have been shown to contrast in their approaches to soil conservation, they both contain some elements in common. Whilst the promotion of education and use of voluntary instruments appear to be more consistent with the rationale of the environmental paradigm, they were frequently part of the earlier dominant paradigm. These elements continue to be strong components of current soil conservation programmes.

Strong government intervention and regulation as that driven by Keynesian economic thinking of the time, has been challenged by public lobbying demanding greater participation and empowerment within social and political decision making. Despite a vast array of divergent doctrines, those in power have responded, recognising environmental issues and the need for democratic change.

As various authors have shown, many traditional soil conservation approaches have failed to counteract the growing degradation of resources. Environmentalists recognised that a change in the prevailing dominant paradigm and the fundamental principle underlying it was needed rather than just changing techniques. Environmentalists and public opinion successfully persuaded governments and a majority of the population that environmental protection was as important as economic growth. In the realm of politics, environmentalists have shown a desire for participative rather than authoritative structures dominated by 'experts'.

These initiatives have been illustrated in shifting the focus of soil conservation programmes from individual land users to targeted groups through programmes such as Landcare groups. An increasing amount of attention is being given to the learning process and context in which it takes place and the interrelated nature of the problems. In response governments have moved away from direct intervention and taken a

greater role of facilitation and co-ordination allowing a greater degree of flexibility in approaches.

The interdependent nature of environmental problems, requires that objectives, policies and programmes across different disciplines, institutional and social groups, need to be integrated so as to provide a multi-disciplinary approach. This approach continues to challenge current institutional and economic arrangements requiring the fundamental principles of the current paradigm to be questioned and for approaches to be developed in a way that achieve the current soil conservation goals.

The next chapter presents the research design and methodology. Chapter Four outlines the methods and rationale used to gather the information necessary to answer the research objectives and questions.

Chapter Four

RESEARCH METHODOLOGY

Chapter Four describes the methods used for undertaking the research. This chapter is divided into four sections correlating to the four phases of the research design illustrated in Figure 4.1. The first section provides the theory and rationale for choosing case study research as the method for investigating the research aim and objectives. The benefits and disadvantages of using this type of method are discussed. The second section of the chapter discusses the method used to analyse plans. A system of plan coding is employed to evaluate regional policy statements and selected regional plans written for land management. The criteria for analysis of these plans are drawn from the research objectives and the theoretical perspectives discussed in Chapters Two and Three.

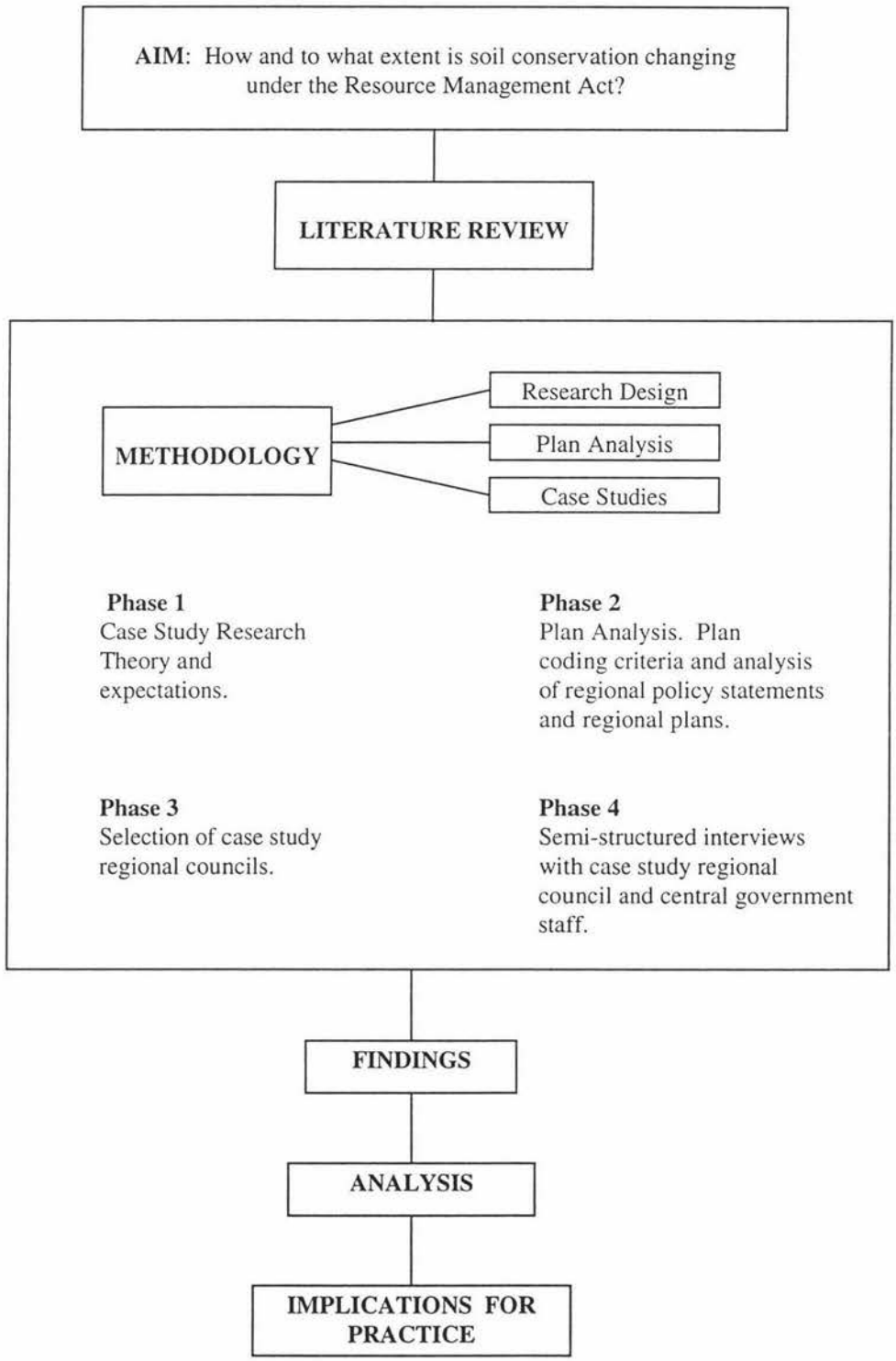
These first two sections create the basis and rationale for choosing case study regional councils. In the third section, three regional councils have been selected as case studies to provide a more focused and in-depth examination of the different regional approaches taken for soil conservation around New Zealand. The fourth section outlines the reasoning for choosing a semi-structured interview method to abstract information from the regional councils and central government departments. The rationale for choosing specific interview candidates is given, along with details of the execution of this part of the methodology.

Research Design

As shown in Figure 4.1, the methodology comprises four phases: case study research theory and expectations, analysis of plans using plan coding, selection of case study regional councils and semi-structured interviews with case study council staff and central government staff. Each phase builds on the previous one. By the time the interviews were undertaken (the fourth and final phase), a detailed knowledge of the issues was developed

allowing the researcher to be better informed and prepared. Each phase is now discussed in turn.

Figure 4.1 Research Design



Case Study Research

Schramm 1971 provides a useful definition and reason for undertaking case study research:

> "...the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what results." (in Yin, 1989, 22).

Case study research is useful where it is required to incorporate the contextual conditions as well as the phenomenon being studied (Yin, 1993). Under New Zealand's current regime of resource management (as earlier outlined in Chapter Two), soil conservation practice is strongly subject to the geographical and institutional conditions of each regional council or unitary authority. Through using a multiple case study approach in investigating three regional councils' programmes, the research attempts to determine the extent and variety contextual factors have in determining particular soil conservation policy and the implications of the outcomes.

Case study research is qualitative rather than quantitative. Questions such as "why", often cannot easily be answered directly. Such questions as demanded by the research objectives, investigate a variety of circumstantial or contextual factors. Case studies are valuable in this regard as they make connections between 'factors on the ground' with often abstract questions (Hakim, 1987).

Case studies are possibly the most flexible of all research designs (Hakim, 1987). The case studies are used to present examples of the diversity of practice through the use of innovative approaches and techniques used in soil conservation.

Case study research has often been viewed as a less desirable form of inquiry than experiments or surveys. This is attributed to the often descriptive nature of case studies and their lack of rigor within the research. Because research using case studies tends to focus on one or a few cases it can also be considered that they provide very little basis for

scientific generalization (Hakim, 1987). In spite of these common concerns, it is considered that the use of multiple case studies and plan analysis will provide a strategy for inquiry that limits biases and helps research rigor and validity.

Case Study Selection

Three case studies have been chosen for this research. A number of factors were used to select the case studies in order to obtain regional councils that would provide good examples to examine the research objectives.

Three case studies were considered sufficient to provide examples of the diversity in perspectives and approaches in soil conservation. The study in general aimed at investigating as diverse range of approaches as possible, thus a council's overall approach to soil conservation was a primary determinant in selection.

The most significant difference between soil conservation approaches, were between those councils who have written regional plans for soil conservation and those that have not. Hawke's Bay Regional Council was chosen on the basis of the council's unique position of having written then withdrawn their regional plan for land management and replaced it with guidelines for self regulation, amongst other techniques.

Gisborne District Council was selected as a unitary authority. The Gisborne area also has a significant soil conservation history, marked by strong central government input into soil conservation programmes. The council currently conducts soil conservation management under its proposed Vegetation Removal and Earthworks Regional Plan.

Manawatu-Wanganui Regional Council comprised the final case study. This council has an operative regional plan for land management.

All three case studies have regional differences in respect to the economic status of the region; the spatial diversity and characteristics of the region's population; the type and

range of land classes and the use of land; and the severity of land degradation. All these factors affect the type of approaches chosen and implemented for soil conservation within each region. The case studies have all been chosen from the North Island to enable ease of travel in undertaking face-to-face interviews by the researcher.

The Ministry for the Environment and the Ministry of Agriculture and Fisheries* were seen as having considerable input into soil conservation at the central government level. Staff within these organisations were also interviewed.

Plan Analysis - Plan Coding

The second phase of the research reviewed relevant plans. Plan coding was used as a technique to analyse regional policy statements and regional land management plans. Plan coding is a quantitative method for conducting a rudimentary content analysis of plans. It is a research method that has been specifically designed to evaluate the quality of plans in regard to natural hazards (Berke, 1994). The method uses an ordinal coding scheme to identify and evaluate selected components within a plan. The plan coding, employed for natural hazards selects "facts", "goals" and "policies" as the key characteristics that define plan quality and hence are used as the criteria for evaluation. This research does not focus on plan quality as much as it is more concerned with approaches and techniques used within the plan.

Earlier attempts have been made at plan evaluation. The goals-achievement matrix was developed by Hill (1968) as a method for ranking alternatives on how they achieve a fixed set of goals. Later Litchfield (1975), expanded this method to consider how various groups within a community were affected by different alternatives (Berke and French, 1994). While these approaches are useful, they do not provide much help in evaluating a selection of plans from different sources as this research requires.

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* Since interviewing staff from the Ministry of Agriculture and Fisheries, this agency has separated into the Ministry of Agriculture and the Ministry of Fisheries.

Berke and French (1994) use plan coding to investigate three significant factors to show the differences in plan quality; the variation in the strength of different mandates used by different regional councils; and to examine the structural and facilitating features of the plan. These three objectives are adapted for use in this research.

The regional policy statements and regional plans deal with a wide range of topics and issues making it impracticable to analyse the whole plan. Consequently the plan coding criteria has been developed to only cover those topics outlined in the research objectives; first, to identify the various soil conservation approaches used; second, identify those involved in developing policy and the implementation of it; third, to identify the links between practice and outcomes of councils' soil conservation programmes; and finally, to assess the extent to which soil conservation is integrated with other forms of resource management.

Plan coding allows conclusions to be drawn about the land management direction of land management taken by councils in general and the types of instruments they have chosen. For example, plan coding evaluates whether a council's approach is regulatory or participative and the types of approaches used within these mandates. Plan coding also allows comparisons to be drawn between techniques used by councils.

Contact was made with all 16 regional and unitary councils to request their plan or relevant documents used for soil conservation and land management. The response was excellent with every council replying with relevant material. The regional plans were used in the plan coding exercise. An initial analysis using plan coding of all the regional policy statements was undertaken to give a general indication of each councils' approach to soil conservation. The regional policy statements provide a framework for managing a region's natural and physical resources by identifying issues and outlining principles and processes for addressing these issues. The plan coding method attributes ordinal scores to elements within the plans as given by the analysis criteria. However, judgment is applied subjectively. In scoring specific aspects of the policy statements and plans, councils'

approaches and techniques can be evaluated numerically and arranged in tabular and graphical form allowing comparisons to be made. The plan analysis criteria consists of 31 plan items grouped under three of the research objectives and a fourth category investigating the general scope of the policy statement. A uniform ordinal coding scheme is given for each plan coding criterion.

The second plan coding analysis was carried out on seven regional land management plans. Regional plans may be written by councils to address specific resource management issues. Currently only four regional councils and three unitary authorities have written regional plans that deal with soil conservation, although most other councils have indicated their intention of formulating such plans in the near future.

These seven regional plans were selected for a more comprehensive analysis than that gained from the analysis of the regional policy statements. Because of the various stages of regional land management plans (from the stage of discussion documents through to operative plans), it was decided to only apply plan coding to operative plans written under the Resource Management Act. However, each council's current soil conservation provisions (whether a proposed regional plan, transitional plan or discussion document) were reviewed, allowing a general perspective of each council's approach and stage in the planning process to be obtained. For analysis of the regional plans, a set of criteria was required to evaluate particular elements within the plan. Plan coding provides a comprehensive and systematic analysis that enables such a criterion to be formulated, allowing comparisons to be made between the plans of various councils.

The plan analysis criteria consists of 28 plan items grouped under the four research objectives and a fifth category investigating the general scope of the plan. The coding scheme is similar to that used for the regional policy statements and schedules can be found in appendix one.

Semi-Structured Interviews

The conduct of semi-structured interviews comprised the fourth phase of the research design. While plan analysis takes a more quantitative approach, interviews complement the results of plan coding with a more in-depth and qualitative form of analysis. Given that the research objectives attempt to elicit the council's interpretations of the Resource Management Act through their approach to soil conservation, it was considered that such information could only effectively be obtained through face-to-face interviews.

There are a variety of forms that interviews can take. Semi-structured interviews have been selected as a method for this study as they enable questions to be asked that relate directly to the research objectives, while at the same time allowing for a degree of flexibility to include other issues related to the topic to be discussed. Semi-structured interviews require an interview schedule to be drawn up prior to the interviews taking place. (The interview schedules are contained in appendix five, six and seven).

Particular regional council staff were targeted in each case study area. This enabled a more focused analysis to be undertaken with key people involved in soil conservation. These included at least one staff member involved in soil conservation policy and another involved in the implementation of such policy. These interviewees were considered best able to inform the researcher of the roles and approaches taken by their council at both the policy and operational levels of soil conservation.

A politician was interviewed within each region. This was usually a regional councillor who was involved in land management, (for example, on a council land management committee). These interviewees provided an institutional perspective as well as providing a perspective on public perception and opinions.

The final representative sought from each case study was from the wider community. These individuals were generally involved in interest groups such as the Federated Farmers Organisation, Landcare or similar community groups. These interviewees provided insight

into how their organisation viewed their regional council and the approaches it has chosen for soil conservation.

Interviews with staff in the Ministry for the Environment and Ministry of Agriculture and Fisheries were undertaken. Interviewees from Ministry for the Environment who were involved with the formulation of the 'Sustainable Land Management Strategy for New Zealand Discussion Paper' were selected. These interviews aimed at obtaining perspectives at central government level of how soil conservation is viewed at this level and the degree of involvement and input of the Ministry for the Environment and the Ministry of Agriculture and Fisheries.

The interviewees can be grouped into three categories, regional council staff and politicians, community representatives and central government staff. The interview schedules were very similar, with some of the questions were rearranged to be more appropriate to the respective groupings of the interviewees. Central government staff were last group to be interviewed.

Although the same questions were addressed to each interview group, no two interviews were exactly alike. This is due to each interviewee being deliberately chosen, not randomly selected (Feldman, 1981). The interviews did not seek a sample of a population, but to learn about the role the interviewee and their perception of the choice of approaches and the impact of them for soil conservation. The interviews also provided 'expert' opinion and perspectives on how changes through the Resource Management Act have occurred and their effects on soil conservation practice.

Initial contact was made to each regional council through regional council staff who had responded to my earlier contact requesting their council's regional plan or policy for soil conservation. These staff members were instrumental in recommending other council staff, councillors and relevant community representatives who would be suitable to interview.

Once these names and addresses were obtained, contact was made by telephone detailing the research objectives and interview process, requesting their involvement. Having arranged an interview time and location, the interview questions were mailed to each interviewee along with confirmation of the interview time, date and location. The letter also requested that the interview be taped and transcribed and sent back to them for review if necessary. In sending the interview questions prior to the interview, it was hoped that each interviewee would have time to think through the questions and issues, enabling better quality responses.

The interviewees proved to be very generous with their time and comments providing a wealth of ideas and information. This material is contained in the next chapter. Chapter Five also provides the findings from the plan coding of the regional policy statements and the regional plans.

Chapter Five

RESEARCH FINDINGS

This chapter presents the findings from the plan coding of the regional policy statements and regional plans, and the case study interviews. The coding results and the findings from the interviews have been arranged around themes derived from the research objectives. A brief background description of the selected regional councils and their physical environment is also included.

PLAN CODING RESULTS: REGIONAL POLICY STATEMENTS

Plan coding of the regional policy statements was undertaken to give a general indication of the direction soil conservation policy is taking. The plan coding results are presented in a combination of graphs and descriptive text. Tables with the raw data can be found in appendices two and three. Because plan coding was chosen to give only a rudimentary content analysis of the policy statements and plans, individual findings have been amalgamated in places to give a more issue-related summary of the results. Bar graphs show general trends. No attempt has been made to draw comparisons between councils as the research was preliminary in nature and did not focus on implementation. The results are organised under three of the research objectives (presented in Chapter One). The plan coding schedules and the definition of the coding scores can be found in appendix one.

Research Objective 1: Identification of soil conservation approaches

Objective One sought to identify the approaches used by councils for soil conservation. Figure 5.1 identifies the number of approaches used by each council as well as the type of approach used. They can be loosely categorised into two main approaches; non-regulatory or participative and regulatory. Techniques such as the provision of education and information, advocacy, use of codes of practice and guidelines, and the establishment of community groups (Landcare groups), are considered in this research

as non-regulatory or participative approaches. Regulatory approaches include rules, abatement notices, enforcement orders and regional plans.

It can be seen from Figure 5.1 that the majority of approaches employed are non-regulatory, (68 percent of the total approaches used). Thirty-eight percent of the approaches are regulatory. For example, each council has indicated in its regional policy statement that they will use some form of regulatory measure, with rules and abatement notices most commonly referred to.

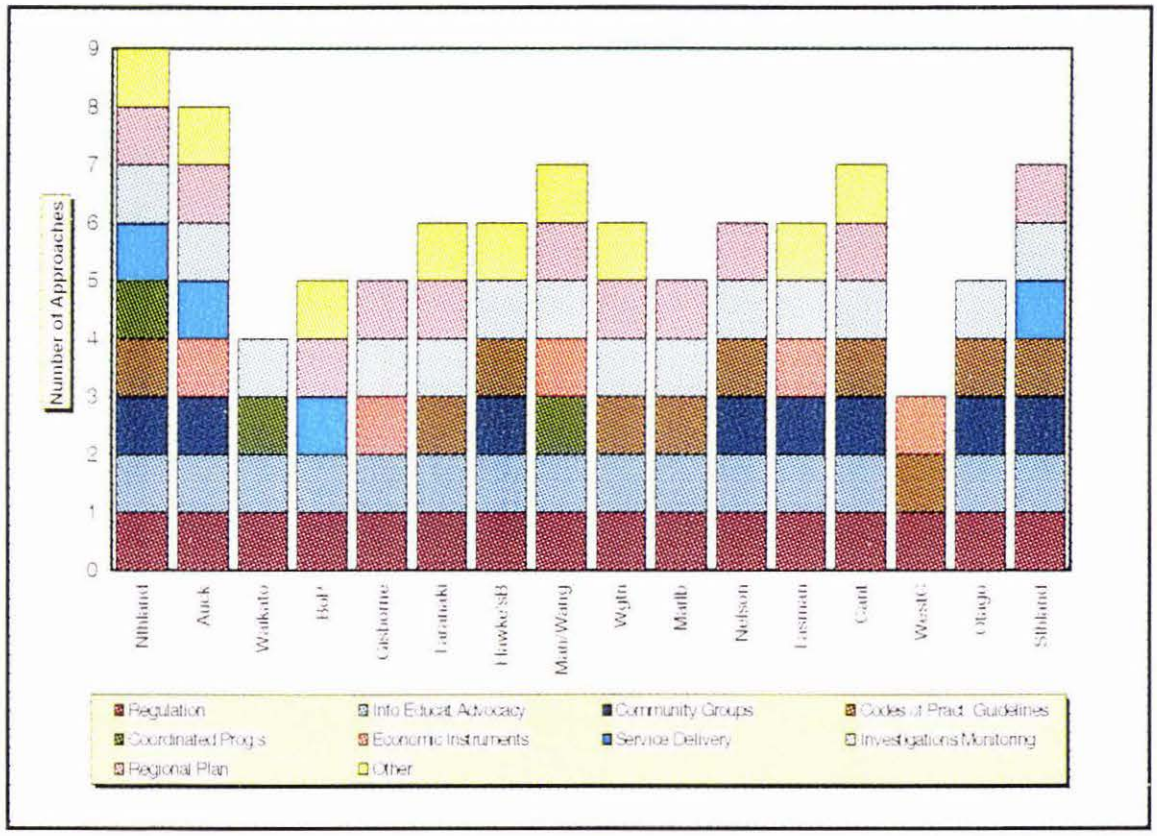

Figure 5.1 Soil Conservation Approaches Identified by Councils in the Regional Policy Statements

The use of information and education provision and advocacy of soil conservation is the most frequently cited technique in the policy statements. Fifteen out of the 16 councils include this technique. However, it should be noted that this research does not indicate the rate of use or priority given to specific approaches. Interviews with

council staff may give a better indication as to whether councils have primary mechanisms, and there style of approach.

Investigation and monitoring of soil conservation are also a common component of councils' approaches. This is, no doubt, due in part to the Resource Management Act's requirement to monitor the state of the environment (section 35). A high proportion of councils (63 percent) have included codes of practice and environmental guidelines for managing soil and land degradation. Seven out of the 16 councils sought ways of encouraging community groups to establish or continue. Landcare groups are frequently mentioned within the regional policy statements as an effective approach for addressing land issues through the encouragement of public participation in land management.

Figure 5.1 shows that councils on average, mention five different techniques for soil conservation and land management. This is due to not only the increased number of techniques available, but also the willingness of councils to use a combination of techniques. For example, councils such as Auckland and Manawatu-Wanganui are combining traditional techniques such as regulatory measures and council co-ordinated programmes with new instruments of economic instruments and environmental monitoring. The broad range of approaches reflects the flexibility provided by the Resource Management Act to enable councils to choose approaches that best suit their region and communities.

Most councils indicate their intention to write regional plans to deal with soil conservation. Currently seven councils have regional land management plans at an operative status. The regional policy statements also detail approaches tailored to their specific regional environments and communities, such as; specialist catchment and riparian management plans, iwi plans, regimes for research, and reforestation programmes.

Research Objective 2: Identification of relevant agencies involved in soil conservation

Objective Two explores the level of responsibility and expectation placed upon various groups to participate in soil conservation planning and practice. The regional policy statements were analysed for their description of the roles or expectations placed on central government, local businesses and community groups, other local authorities within and adjacent to their region and local Maori. A description and explanation of their own functions (through policies) was also assessed. The regional policy statements were allocated a score of two if they fully described (through objectives, policies and methods) the councils' expectation of the roles for the sectors (central government, regional councils, businesses and community groups, local authorities and local Maori), in relation to the management of land for soil conservation. A score of one was allocated if a role was mentioned in relation to natural resources in general. A score of zero was given if no mention was made.

Figure 5.2 show that the role of the council itself is usually well described, with objectives, policies and methods of how councils will undertake their soil conservation functions. These provisions convey to the public the responsibilities their councils have taken for land management.

The second most detailed function outlined in the regional policy statements is that of other local authorities. Most statements identify their constituent territorial authorities and neighbouring regional councils. Only six out of 16 policy statements identify land management functions that are required of their territorial councils in their region. In some regional policy statements, councils identify the need for other territorial authorities' policies to be consistent with their own. Maori are recognised as having a role to play by just over half of the councils. However this role was only portrayed in relation to natural resources in general, with no specific expectations allocated for soil conservation or land management.

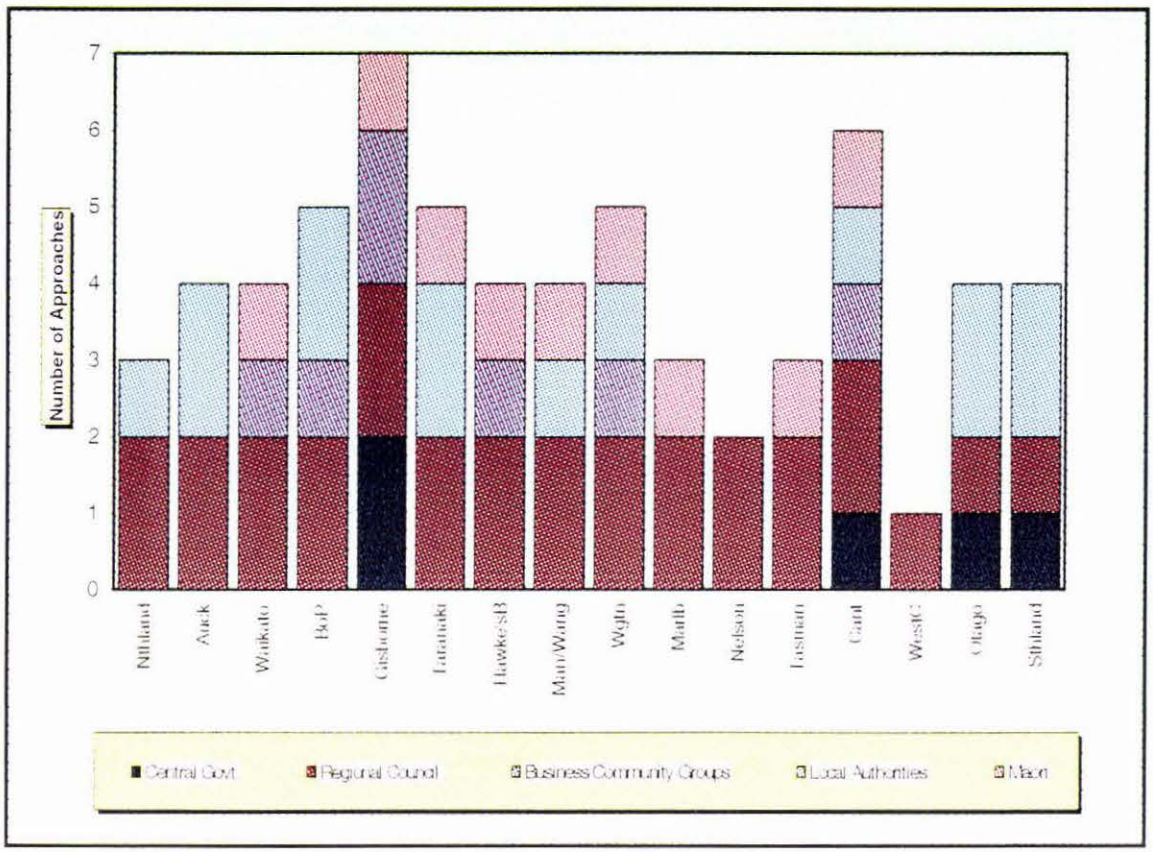

Figure 5.2. Functions of those Involved in Soil Conservation Identified in the Regional Policy Statements

Central government places emphasis (through resource management law reforms and local government restructuring) on devolving responsibility and increasing community participation. It is interesting to note the extent to which councils are devolving responsibility to local communities and businesses. Few councils have assumed that community groups and businesses will take responsibility for the management of land. Those councils that do only give mention of their involvement in relation to natural resources in general. Even fewer councils mention expectations of central government agencies. With the exception of Gisborne District Council, comments were very brief and general in outlining any role that central government may have to play in land management.

Research Objective 4: Integration of soil conservation with sustainable management

The Resource Management Act outlines the requirement for councils to achieve

integrated management (sction 30(2)(b). This requires two types of integration, firstly the integration of natural and physical resources of the region. Organisational integration is the second type of integration. Here the scope for co-ordination and liaison between regional and territorial councils was investigated. The regional policy statements were given the total score (two) if they included Resource Management Act requirements, along with objectives, policies and methods for the integration of land resources. A score of one was given to councils who mentioned the need for integration, but had no mechanisms for achieving it. Figure 5.3 shows the results. The Regional Policy Statement from the West Coast Regional Council did not contain any of the components investigated by the plan coding and was scored zero.

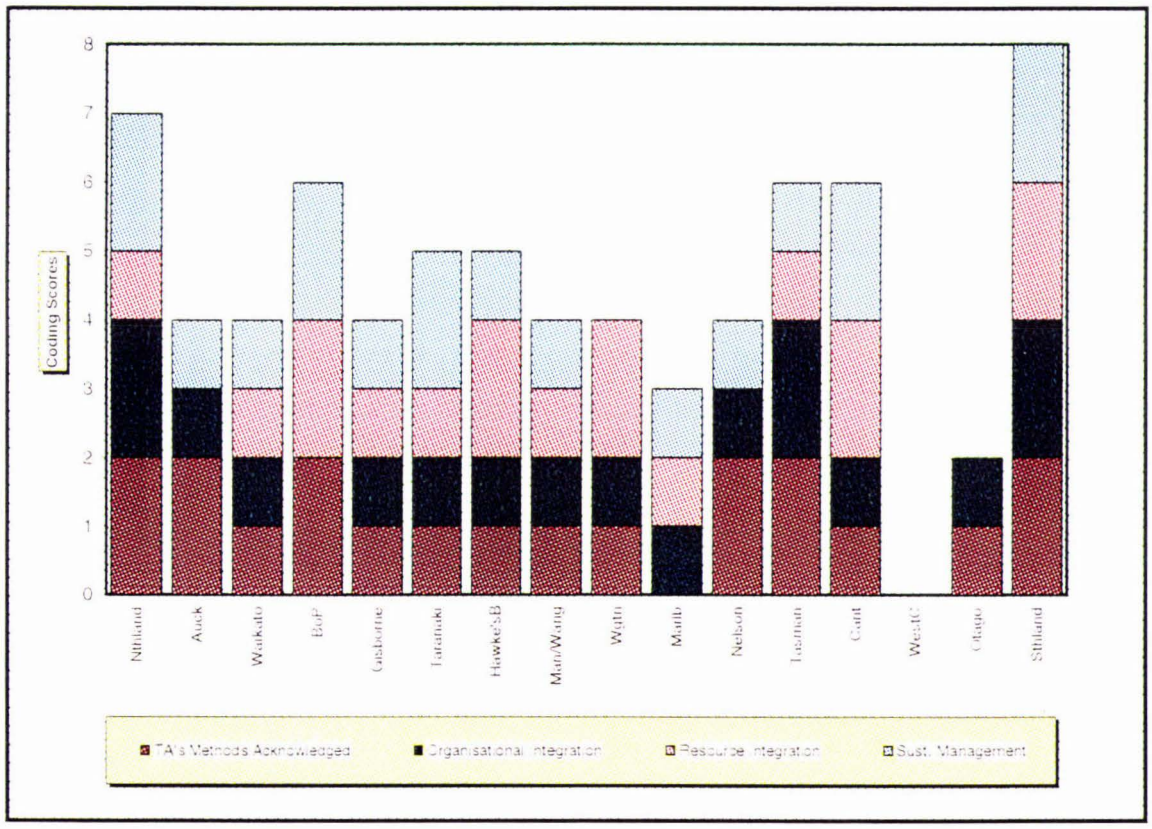

Figure 5.3 Integration of Soil Conservation with Resource and Organisational Factors within Regional Policy Statements

An indication of the degree of resource integration can be gained from discussion of sustainable management in the policy statements. Discussion of sustainable land management generally included the notion of managing land resources in an integrated

manner. Most councils refer to the sustainable management of resources, though few give a definition of sustainable management in relation to their regional resources and how they would go about achieving it.

Within the regional policy statements, soil conservation is rarely dealt with as a specific issue. It was generally integrated with other land management issues, and occasionally with riparian management and water issues. For most councils, resource integration only extends as far as mentioning the desire to integrate soil conservation with other resource issues. Very few councils have policies and methods for integrating soil conservation with other resources or cross reference policies for similar land management issues.

Integration and co-ordination of land management functions of agencies include issues that cross physical and managerial boundaries. Regional policy statements are required under section 67(1)(h) of the Resource Management Act to deal with issues that cross local authority boundaries and issues between territorial authorities, and between regions. The policy statements were given as score of two if they outlined courses of action for dealing with specific regional resources. A score of one was allocated if only courses of action were stated. Nearly all policy statements contain processes that deal with issues which cross territorial boundaries and regions. In most regional policy statements, courses of action are stated generally with no specific reference to soil conservation issues. Details only go as far as recognising that other territorial authorities will have different policies and implementation methods for land management.

PLAN CODING RESULTS: REGIONAL LAND MANAGEMENT PLANS

The second plan coding analysis was carried out on regional land management plans. Seven plans dealing with soil conservation and land management were coded. The plans were written by the regional councils of Northland, Auckland, Bay of Plenty and Manawatu-Wanganui, and the unitary authorities of Gisborne and Marlborough District Councils. Marlborough District Council has written two plans for the Marlborough Sounds and the Marlborough District outside of the Sounds area, both were analysed individually. As for the regional policy statements, no attempt has been made to draw comparisons between councils due to the preliminary nature of the analysis.

The results of the coding are organised under the four research objectives presented in Chapter One. Coding of the regional plans gives a more in-depth analysis of specific approaches taken for land management. Compiled bar graphs are used to illustrate the results along with a brief discussion. The regional plans were scored in the same manner as the regional policy statements. The questions asked and the rationale for the coding scores can be found in appendix one.

Research Objective 1: Identification of soil conservation approaches

The regional land management plans reinforce the trends found in the regional policy statements in the range of approaches taken for soil conservation. Regulation and advocacy (which includes programmes of education and information provision) are the two main approaches used for soil conservation within the plans. Forty-three percent of the approaches taken for land management are regulatory, with 57 percent of the approaches and techniques being participative. As seen in the results of the regional policy statements, environmental investigation and monitoring are also a component of most land management plans.

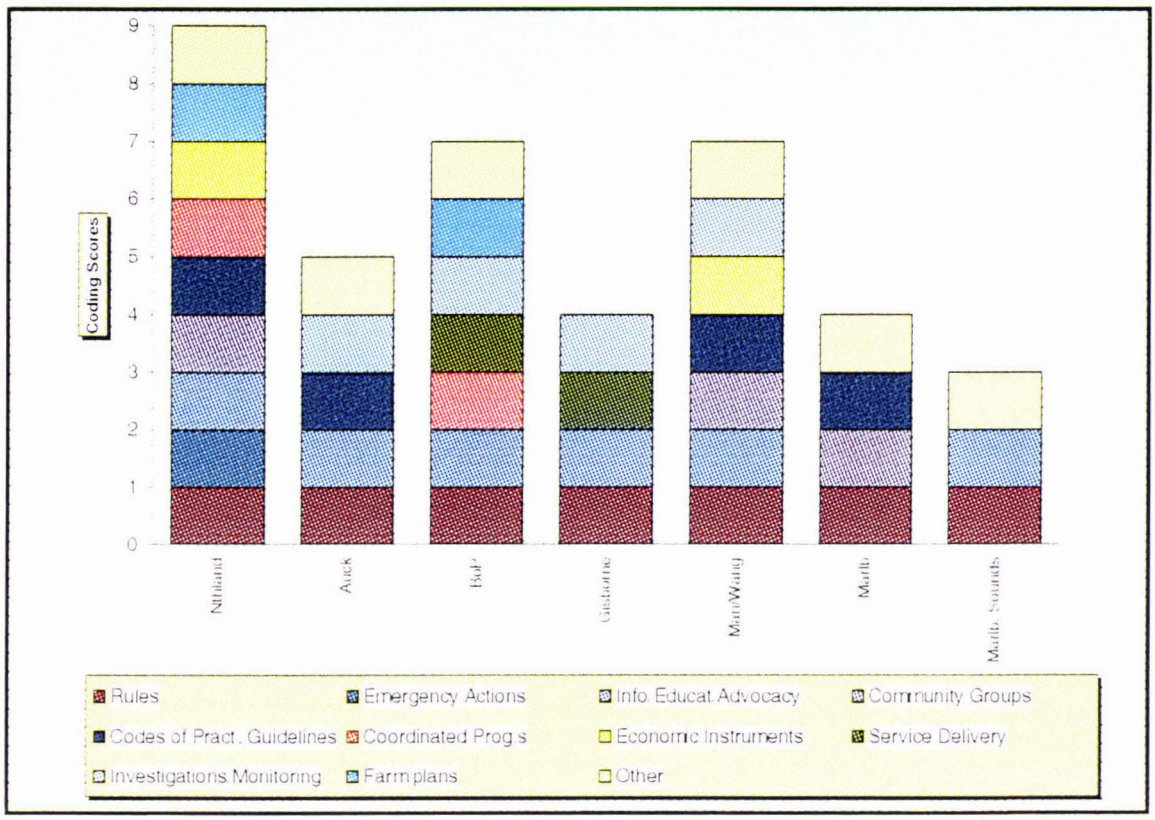

Figure 5.4 Soil Conservation Approaches Identified by Councils in Regional Plans

The plan coding results show a definite move away from works-orientated techniques such as service delivery and co-ordinated programmes. For both these techniques the council is required to act as a programme co-ordinator supplying the information, expertise and facilities.

Research Objective 2: Identification of relevant agencies involved in soil conservation

Objective Two aims to indicate the level of responsibility and expectation placed by councils upon various sectors to participate in soil conservation policy and implementation. The seven plans were analysed for their description of the functions placed on central government, local businesses and community groups, other territorial authorities within the region and local Maori. The plans should also contain a description and rationale of the councils' roles - both in setting land management policy and their role in implementing soil conservation works. The plans were allocated a score of two if they fully described (through objectives, policies and

methods) the council's expectations of a sector's land management functions, and a score of one if the plans did not have full provisions (such as policies or methods) for these functions to be fully understood and undertaken.

Figure 5.5 shows that councils have strongly identified their involvement in both the policy and implementation phases of soil conservation. This provides the community with a good description of what they can expect from regional councils. Only four out of the seven plans identify sectors and authorities that may have a role in land management, with no specific roles or expectations placed upon them. The unitary authorities of Marlborough and Gisborne do not have constituent territorial authorities, however it may be useful for them to acknowledge and accommodate the approaches of neighbouring authorities.

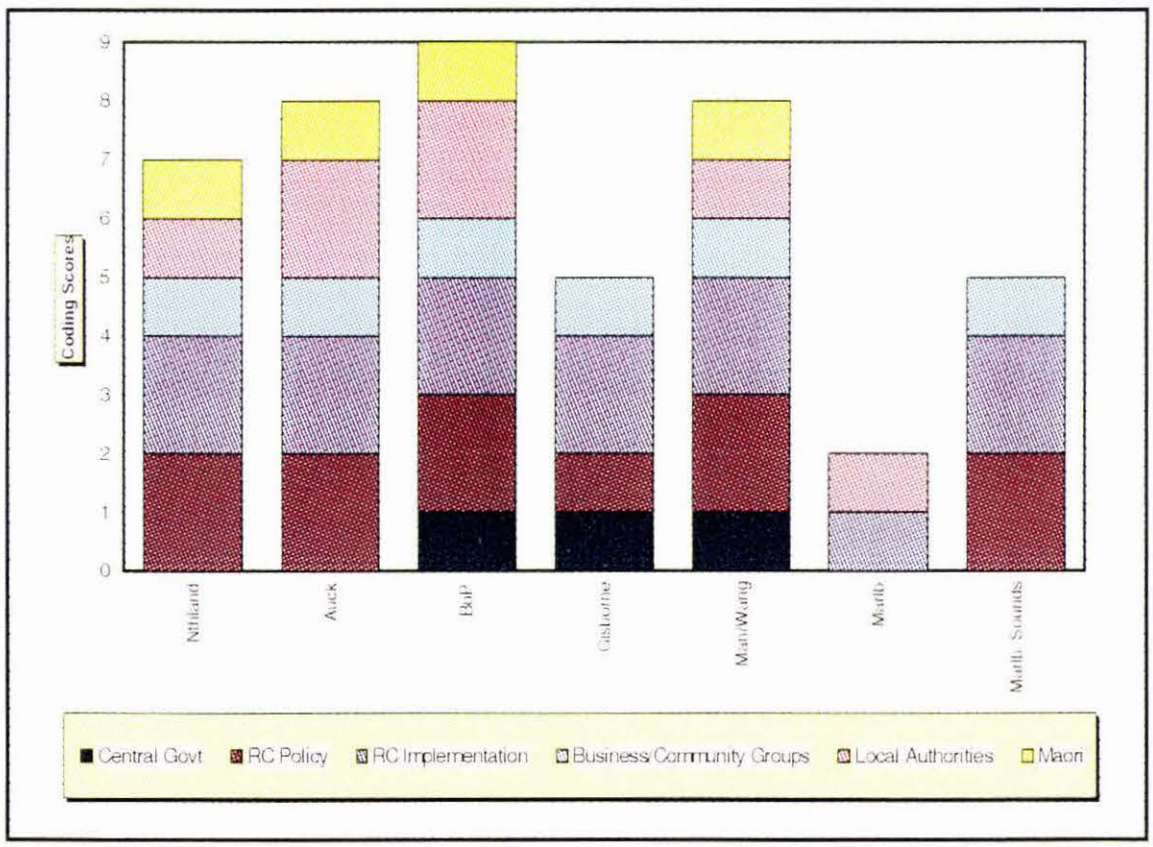

Figure 5.5 Functions of those Involved in Soil Conservation Identified in the Regional Plans

Research Objective 3: Identification of the links between soil conservation practice and outcomes

This objective endeavours to determine whether soil conservation policies and practices under current resource management structures incorporate long-term planning and accountability. Links between soil conservation policies and practice and their outcomes are required to enable monitoring of the effectiveness of soil conservation programmes. The plans could indicate, for example, the statutory provisions that are available to ensure that benefactors of soil conservation works are accountable to maintain or enhance the works in the long term. For example, where landowners have received funding for soil conservation works, a provision may be made in a plan to ensure that the works are actually undertaken and maintained.

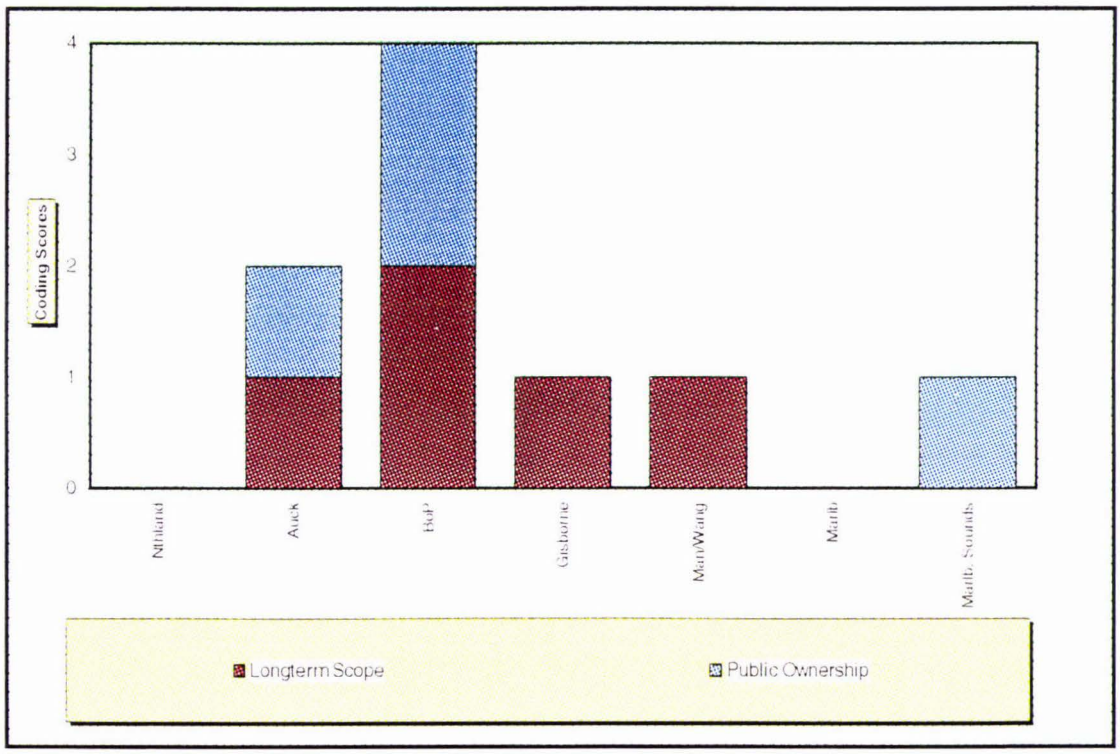

Figure 5.6 Accountability Links between Councils and Communities Involved in Soil Conservation.

Only one regional plan (that of Environment Bay of Plenty) outlines objectives, policies and methods relating to community responsibility and obligations as resource users. Two out of the other six councils mention the need for public ownership of problems and management of land resources in general terms.

Research Objective 4: Integration of soil conservation with sustainable land management

The regional plans were investigated for their provisions to achieve the integration of natural and physical resources of their region as well as organisational integration. The plans were scored a two if they included specific objectives, policies and methods for the integration of resources and one if integration of resources, for example integration of land and water were mentioned, but contained no mechanisms to achieve integration. Figure 5.7 shows the following results.

The definition of, and reference to sustainable land management usually includes notions of integrated management of all land issues. Where councils use the term sustainable land management, they tend to have a broader focus than just that of soil conservation. Soil conservation is generally only a component of this broader focus. Four out of the seven plans analysed refer to sustainable land management, describing it as a goal or aim required under the Resource Management Act. No plans provided a definition of sustainable land management in relation to their region or how they will set about achieving it.

The plans did indicate in other ways that soil conservation is beginning to be integrated with other issues. Three out of the seven plans coded contain policies and methods for the integration of other resources. Soil conservation is generally integrated with riparian management or water management issues. Only two plans deal with soil conservation separately.

For the evaluation of a plan's provisions for organisational integration, a score of two was allocated where detailed courses of action in relation to regional resources were given. A score of one was allocated where organisational integration was implicitly stated.

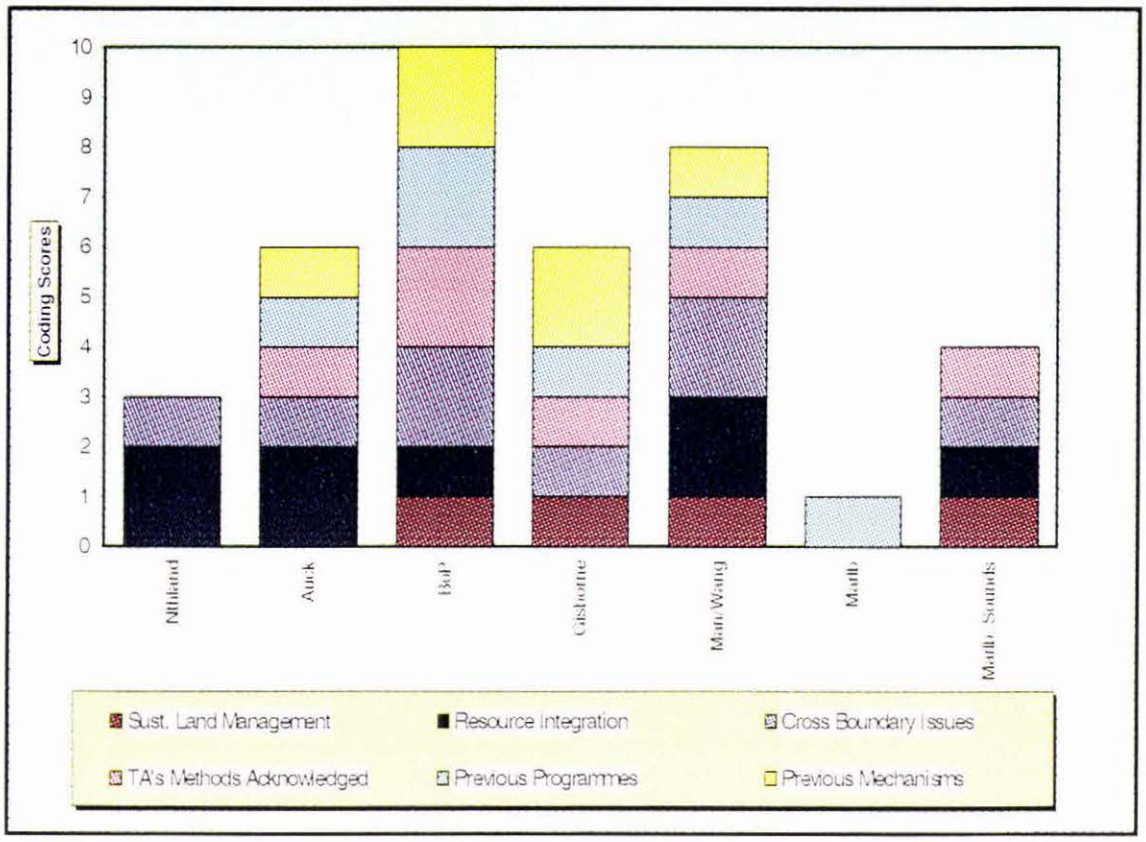

Figure 5.7 Resource and Organisational Integration Identified within Regional Plans

The results show that most of the plans address cross boundary issues that occur within soil conservation management. However, only two plans outline specific courses of action as to how they will to deal with these issues. The functions of other territorial authorities were generally acknowledged. One plan contained actual policies and methods for acknowledging and incorporating other councils' measures into their own.

Most plans mention the carry forward of previous programmes and mechanisms into their current plans. However, few plans detail the reasons as to why or why not such programmes (such as farm programmes or plans) have been included or removed under the new resource management regime within their currently operative plans. The provision of rationale for existing or new programmes helps set objectives for monitoring the achievement and success of a particular approach.

DESCRIPTION OF THE CASE STUDY COUNCILS

This section provides background descriptions of the selected councils. The description includes general information about the region, the type and extent of soil erosion. Soil conservation initiatives that have been undertaken by previous catchment boards through to current regional council approaches are summarised These summaries illustrate the comparative differences among the three regions and the influence past soil conservation approaches may have on current and future initiatives for land management.

GISBORNE DISTRICT COUNCIL

East Coast Region

The Gisborne District covers 8331 square kilometres. It has a population of just under 45000 which has been declining for the past decade. Two thirds of the population resides in the city of Gisborne, leaving the rural area very sparsely populated. Gisborne District Council operates as a unitary authority.

The Gisborne - East Coast region is geographically distinct, (see Figure 5.8, Map of the East Coast Region). The area is characterised as being remote and separated by the rugged terrain. From the Raukumara Range to the coast is a large area of hill country, composed of soft siltstone and mudstone rocks. These areas are prone to slipping. The lowland areas are limited to numerous river valleys and coastal alluvial plains. The East Cape peninsula is uplifting at a rate of about 4 mm per year. In geological terms this is very fast and results in the faster down cutting of river systems than in other more stable parts of the country (Gisborne District Council, 1994a). Within the Region's boundaries are four major river catchments, the Hangaroa, the Waipoua, the Motu and the Waikura rivers. The heavy sediment and gravel bed loads carried by these rivers have caused aggradation of the river beds, and this in turn increases the potential of flooding (Gisborne District Council, 1994b).

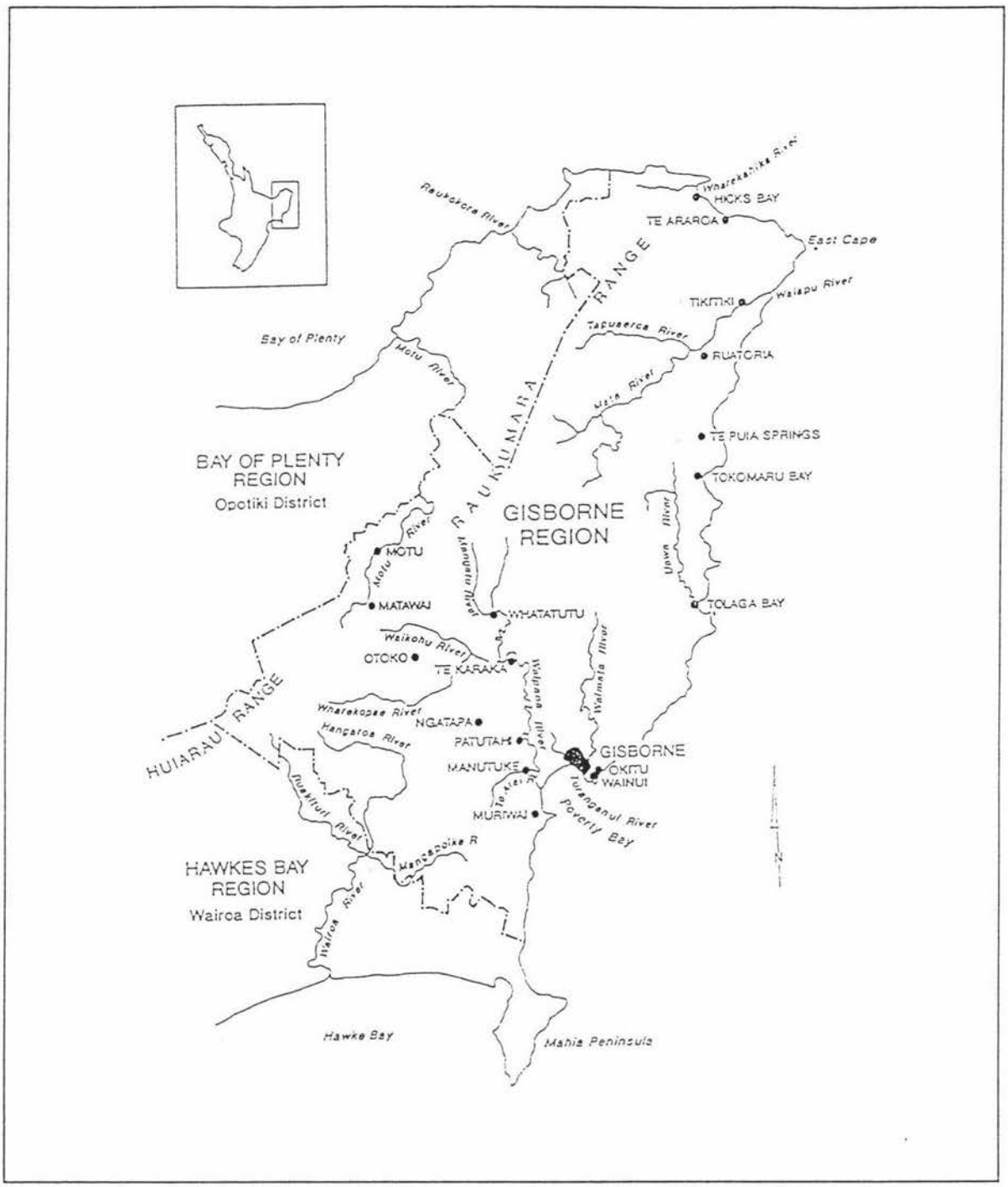

Figure 5.8 The Gisborne Region

Source: Gisborne District Council, 1994c

The Gisborne area is a farming district dominated by hill country sheep farming. This has been supplemented over recent years by fishing and the development of horticulture on the more fertile flood plains. There have been substantial plantings of commercial plantation forests. Conservation forests have also been established primarily or partially to conserve soil erosion (Gisborne District Council, 1994a).

Soil Erosion

Ninety-two percent of Gisborne District is hill country. Most of the hill country is restricted in its use because the susceptibility to soil erosion is severe. The Region comprises only 7.8 percent of the North Island area but contains 26 percent of the total North Island land that is severely eroded (Gisborne District Council, 1994a). Skeletal (shallow) soils cover most of the Region's hill country and when wet they expand and become unstable. Consequently instability is the main problem of these soils, making them highly erodible and the major contributors to bedload and aggradation problems within river catchments (ibid).

The main erosion types are earthflow, gully, and slumping which tends to be associated with storm events. Often several erosion types are found in combination or in close proximity to one another. Much of the slumping and earthflow introduce large volumes of soil and debris into watercourses (ibid).

Soil Conservation Initiatives

In keeping with national trends, the former Poverty Bay Catchment Board concentrated heavily on using incentives to implement soil conservation works on farms. Central government established demonstration farms in this area, to demonstrate soil conservation techniques and to undertake research. From the early 1950's the emphasis on engineering solutions resulted in pole planting* as the main soil conservation technique.

* Pole planting refers to the planting of poplar, willow and pine tree species for soil conservation works. The trees have very little foliage or branches and look like poles.

Catchment Boards were operated through government subsidies and monies obtained rather than funding through the present regime of regional rates. The Government has provided an administration fund that "topped up" a region's funding where their rates fell short in comparison to other regions. The Gisborne area received one of the highest administration fund during this era. Central government has also had other forms of input into the region. The centrally led East Coast Forestry Project was developed in 1970. This project introduced afforestation as a more broad scale and successful method of addressing active soil erosion. Large forestry projects were begun in the most eroded areas such as the Waipoua and Mangatu catchments.

In 1988 the East Coast was hit by Cyclone Bola. Flooding and erosion created severe damage and huge losses within the farming industry. With subsequent intensive lobbying and publicity, central government initiated the East Coast Project Conservation Forestry Scheme. The East Coast Project Review stated;

> "In terms of national policy for erosion control the East Coast is a special case. This is because the areal extent of severe erosion is far greater that elsewhere in the country, because here land left untreated deteriorates rapidly and because the erosion in the hill country deposits vast amounts of sediment in river channels which greatly increases the risk of major flooding downstream"
> (Gisborne District Council, 1994a, 13).

This status allowed subsidy monies for pastoral soil conservation works to be continued. This was a strong contrast to nearly all other regions where government was withdrawing from providing subsidies.

The new East Coast Forestry Project was launched in 1993 with three objectives; to address the more severe soil erosion in the District, to create employment; and to promote regional development in an economically depressed area (Gisborne District Council, 1994a). The Parliamentary Commissioner for the Environment has produced two reports in the last five years with recommendations for soil conservation to the Gisborne District Council. The Commissioner's 1988 report inquired into flood

mitigation measures following Cyclone Bola with recommendations. The 1993 report investigated water and soil resource management on the East Coast.

Gisborne District Council has replaced old Section 34 Notices with a regional plan (Vegetation Removal and Earthworks Regional Plan) which "calls in" consent applications for vegetation removal and earthworks on land susceptible to erosion. Consents may then be declined or issued with or without conditions attached. Council's resolve to pursue a strong focused soil conservation advocacy programme has seen a significant increase in budget allowance in the last two years, with a clear move away from soil conservation service delivery

A Regional Sustainable Land Management Plan is proposed to replace the current Vegetation Removal and Earthworks Regional Plan prepared under the Resource Management Act. Considerable soil conservation databases (including photomaps and text data), and a detailed land use capability database covering two thirds of the pastoral hill country will complement the implementation of this plan (Gisborne District Council, 1994a).

Methods listed for soil conservation in the Regional Policy Statement and Proposed Regional Plan include; education, advocacy, encouragement of central government assistance, and provision of material (such as poles for soil conservation works) and financial assistance where central government subsidy is available. Currently under investigation is the application of "eroder pays" and the extension of current regional rules into the wider field of all uses and practices which cause soil erosion (ibid).

MANAWATU-WANGANUI REGIONAL COUNCIL

Manawatu-Wanganui Region

The Manawatu-Wanganui region covers a land area of 22179 square kilometres. This is approximately 10 percent of New Zealand's total land area. The region stretches from south of Levin to north-west of Wanganui on the west coast and north beyond Taumarunui. Three major mountain ranges are located in the region - the Tararua, Ruahine, and Kaimanawa ranges, as well as two lesser ranges - the Hauhangaroa and Puketoi ranges, (see Figure 5.9, Map of the Manawatu-Wanganui Region).

The population of the region at the 1995 census was 233 800, making it the fifth most populated region in New Zealand. The major urban settlements are Palmerston North and Wanganui, with the urban centres including Levin, Fielding, Dannevirke, Taumarunui, and Marton. Almost 70 per cent of the population live in urban areas. The region's population is predicted to grow 12.4 percent over the next 25 years. Within the region are seven territorial authorities - Ruapehu, Wanganui, Rangatikei, Manawatu, Tararua, and Horowhenua District Councils and Palmerston North City Council. Parts of Stratford, Waitomo, and Taupo District Councils are also in the region (Manawatu-Wanganui Regional Council, 1993c).

Settlement of the area began around the 1860's, with timber milling being the predominant activity. Dense bush originally covered the region, and thick totara forest was the prime source of timber. By the 1880's the milling industry declined as forests were reduced in size. From 1890 onwards farming and farm settlements gradually dominated with dairying becoming the major industry. Recently, settlement patterns have been characterised by a decrease in rural population and an increase in rural residential lifestyle blocks near the larger urban centres (ibid).

The Regional Council boundaries are based on river catchments. It includes three major catchments; the Whanganui, Rangitikei, and the Manawatu. The marine and river terraces.

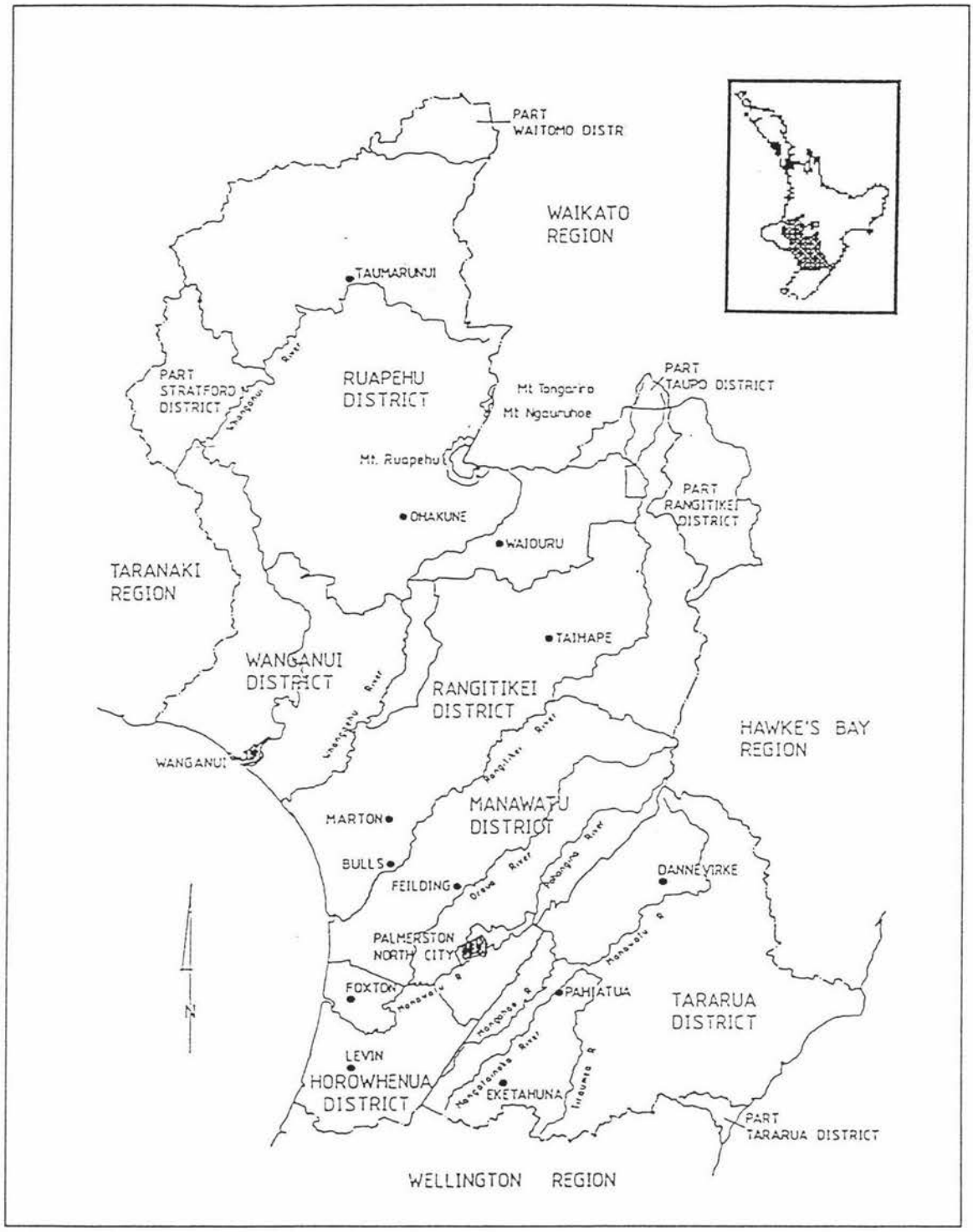

Figure 5.9 The Manawatu-Wanganui Region

Source: Manawatu-Wanganui Regional Council, 1996

in the Manawatu area are covered with highly productive soils that have been developed for grazing, cropping and horticulture. On a national scale the Region's economy is relatively healthy and experiencing growth, with agriculture making a major contribution to the regional economy. A number of forestry plantations and farm woodlots have been established in the last 20 years, but still only account for about two percent of the land use in the region (Hicks et al., 1993).

Soil Erosion

Within the Manawatu-Wanganui Region five major types of landforms can be identified. These include: mountain land; hill country; downland; plains and terraces; and sand country. Over two thirds of the region is hill or mountain country. Hill country includes volcanic and tertiary soil types of mudstone, sandstone, siltstone and greywacke. Of these four major types, only the greywacke is stable in 3.2 per cent of the region. The rest is vulnerable and can erode quickly (Manawatu Wanganui Regional Council, 1994a).

A large proportion of the inland hill country displays geological uplift of the soft sedimentary rock called papa. These narrow ridges with steep sloping valleys are prone to large-scale surface movement. Other areas of sandstone and siltstone also make erosion common throughout the area (ibid).

Soil Conservation Initiatives

The Manawatu Catchment Board was established in 1943. The Catchment Board's jurisdiction extended from Paraparaumu north to Himitangi beach and east including the areas of Fielding, Dannevirke, Woodville and Eketahuna. The Catchment Board's aim, as like other Catchment boards was to "promote and provide for more efficient land usage". This aim was embodied in efforts to conserve soil, eliminate erosion and control flooding, bringing land into full economic production. Much of the soil conservation work was linked with the establishment of farm plans which were usually a five year programme (Hannigan, 1982, 20).

The Manawatu-Wanganui Regional Council has chosen to write a Regional Land Management Plan for the region. The Council's regional policy statement states that the regional council shall:

> "Prepare a Regional Plan that incorporates controls on land use activities on soils vulnerable to erosion, and details proposals to promote sustainable land management".

The plan contains regulatory methods, where rules are focused on the more vulnerable landforms of the region. For the 1995/96 year the Council has budgeted for $342 500 to be used for targeted incentives to individuals undertaking soil conservation works, such as the retirement of land. The plan also contains methods of information and education, advisory services and the promotion of research to promote and obtain sustainable land use (Manawatu-Wanganui Regional Council, 1995a).

HAWKE'S BAY REGIONAL COUNCIL

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. It stretches from north of the Mahia Peninsula to just south of Porangahau. It is flanked in the east by the coastline and in the west by the Ruahine, Kaweka, Huiarai and Ahimawana ranges (Hawke's Bay Regional Council, 1995) as seen in Figure 5.10.

Four territorial authorities exist within the Hawke's Bay Regional Council's boundaries; Wairoa, Hastings and Central Hawke's Bay District Councils and the Napier City Council. Parts of the Taupo and Rangitikei District Councils are part of the region also. The 1995 census figure totalled 141 500 residents in the Hawke's Bay region, making it the eighth most populous region in New Zealand.

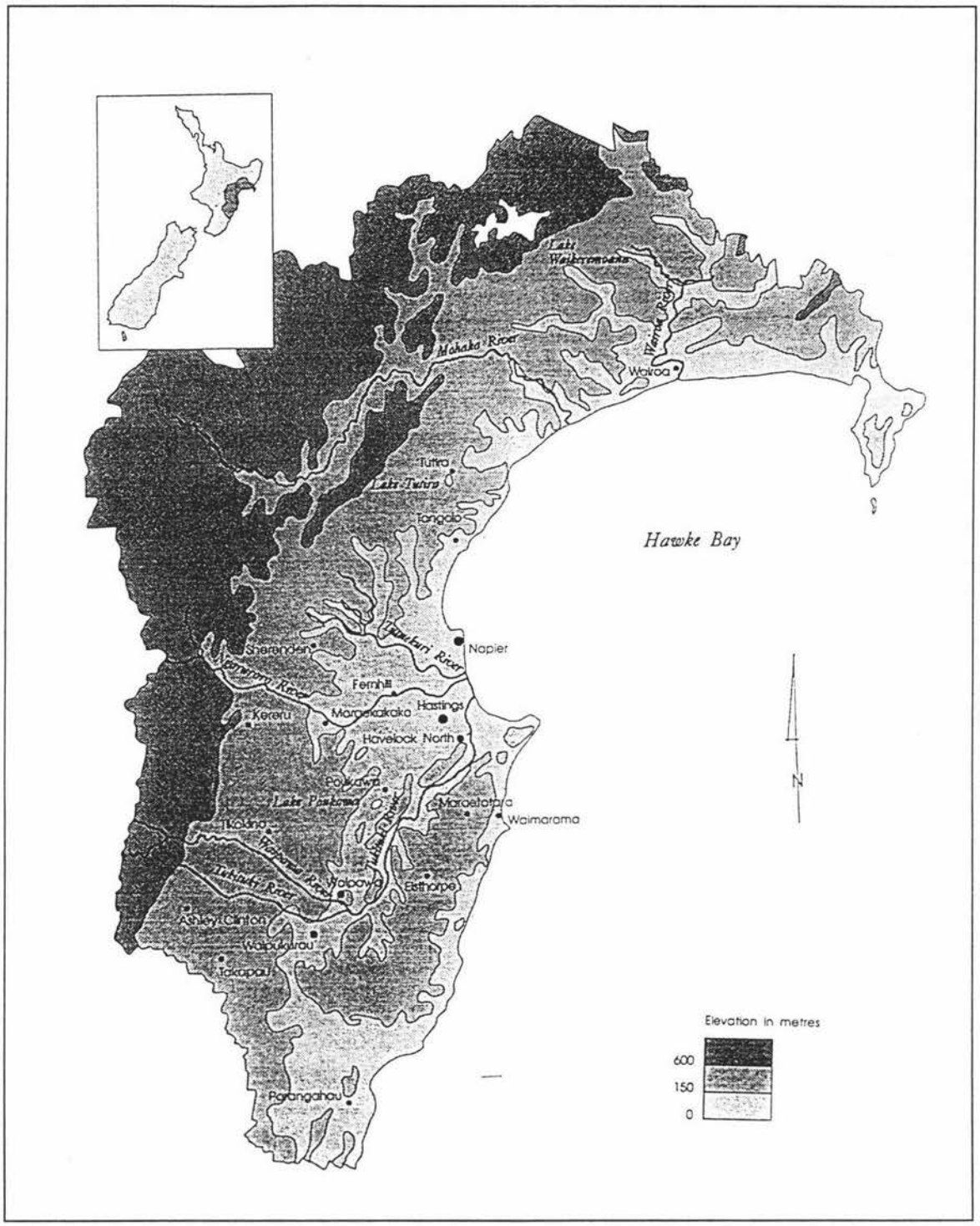

Figure 5.10 The Hawke's Bay Region

Source: Adapted from Keen, 1994

In the 1840's, graziers began to develop sheep stations with small settlement becoming established. Later agriculture diversified with the increase in commercial orchards and vineyards. In recent years there has been a significant development of plantation forestry, particularly in the hill country in northern Hawke's Bay (Hawke's Bay Regional Council, 1995).

Soil Erosion

There are three major land forms in the Hawke's Bay region; inland mountain ranges, lowlands and river valleys and coastal ranges. The inland hill country and ranges are steep and are covered by youthful soils which are periodically renewed by surface slips. The ranges and associated hill country also are prone to erosion with considerable overland runoff (Hawke's Bay Regional Council, 1995b).

The inland plains consist predominantly of the Heretaunga Plains and the Takapau Plains. These areas have some of the highest quality soils for agricultural and horticultural uses, however, they are also prone to wind erosion (ibid).

Soil Conservation Initiatives

Since forest cover was removed 150 years ago in northern Hawke's Bay, various pastoral farming regimes have led to a 30 percent decline in potential productivity on steep hill country and a 12 percent decline on moderate hill country (Blackford et al., 1993). Most of the soil conservation works after World War Two were undertaken on individual properties, rather than as comprehensive schemes. Works mainly involved poplar, willow and pine plantings. The Hawke's Bay Catchment Board established its own nurseries to provide trees for conservation works. In later years the Board's staff devoted most of their efforts to developing and supervising farm plans - schemes that involved several types of remedial action for soil erosion (Dunlop, 1992). The Hawke's Bay region has a prominent history of severe flooding and eroding landforms, demonstrating the need for relevant soil conservation provisions. More recently, the Hawke's Bay experienced the severe storms of Cyclone Bola in 1988 creating extensive damage, particularly in the northern part of the region.

From 1973 until 1993 the Hawke's Bay Catchment Board, later the Regional Council, exercised control over hill country erosion through the operation of Section 34 notices, issued under the Soil Conservation and Rivers Control Act 1941*. The area of jurisdiction for the Hawke's Bay Regional Council is the same as that of the previous Catchment Board.

The Council's current soil conservation approach is contained in the regional policy statement. Policies state;

> "All persons exercising functions and powers under this Act shall promote greater self regulation of activities by landowners, including:
> - recognition of and implementation of industry codes of practice
> - recognition and endorsement of sustainable land management accords.

To achieve these policies, the council's initial approach was to prepare a Hill Country Erosion Plan. The plan and the rules within it received considerable opposition from different sections of the community, causing Council to rethink its approach. The plan was withdrawn in favour of a 'self regulation' approach to land management. There is currently no pro-active regulatory control over hill country, however, the Regional Council uses abatement notices where needed. The only regulations controlling vegetation and earthworks are in district plans, where Wairoa District Council has made specific provisions for these aspects in its District Plan. The Wairoa district covers the northern Hawke's Bay region.

Hawke's Bay Regional Council is attempting to encourage a partnership approach to sustainable land management. This approach has a strong emphasis on mechanisms of information provision, education and facilitation elements. The Council considers that preparing regional rules to control land use activities in steep hill country will overlap with district plans and that a 'tool box' approach to land management will be the most

* Section 34 notices required persons who wished to undertake certain activities in certain types of land to get prior approval of the Catchment Board.

effective. Techniques within this approach include education, training courses for land users, field days, farm planning and assistance in preparing regional guidelines. The council also makes funding available as part of their Regional Landcare Incentive Scheme, where up to a 50 percent grant is given for sustainable land use projects. The approach of giving the rural community an opportunity to demonstrate their ability to manage land sustainably in the absence of regulation is being trialled over a two year period. The Council is currently reviewing the performance of their present land management approaches to determine whether a regional land management plan is required.

FINDINGS FROM CASE STUDY INTERVIEWS

Interviews were conducted with policy analyst, planners, soil conservators and regional councillors for each of the three case study councils. A representative of a community group involved in land management was also interviewed for each region. The material collected from these interviews was initially put into a spread sheet with each interviewees comments arranged under the interview questions. This enabled general trends and themes to be identified. Within this section the findings from the case study interviews are presented with quotes given from various interviewees to demonstrate issues and examples.

The findings have been organised in a manner that discusses trends in general. Particular councils and the perspectives of the interviewee groups (such as those involved in policy, implementation, regional councillors and community representatives) are highlighted where a variation from the norm is detected. The interviewees undertaken with staff from the Ministry for the Environment and the Ministry of Agriculture and Fisheries are not included in this chapter, but are used to inform the analysis section in Chapter Six.

Approaches and Techniques Used in Soil Conservation

The Rationale for Implementing Soil Conservation

The initial response by almost all interviewees stated that the primary reason they undertook soil conservation was to fulfil the requirements of the Resource Management Act, where section 30 states that within the function of regional councils shall (1)(c)(i) "control the use of land for the purpose of soil conservation". The physical state of their regional environments provided the second rationale for councils carrying out soil conservation practice. A third reason (given by 36 per cent of interviewees), was that historical events and management regimes set a precedence for current soil conservation practices. Comments from interviewees include;

> "A certain inertia from the regional council has continued the historical promotion of soil conservation".

> The Manawatu-Wanganui region has "historically experienced problems in the sand country, where techniques have developed out of this".

When probed about whether community input or lobby groups influenced the need to perform soil conservation functions, very few interviewees considered that community concerns or interest in land management influenced whether their councils undertook soil conservation. However, most acknowledged that the need for soil conservation was generally desired by the community and the council.

Soil Conservation Priority Within Councils

The level of priority given to soil conservation in all three councils was difficult to assess. However, some impression can be drawn from the budgetary provisions in the annual plan and the number of staff and resources employed in this area. In general, interviewees of all three case studies considered that their council did not place a high priority on soil conservation. A variety of reasons were given by regional council staff as to what had determined this priority. Most interviewees suggested on average there were three influencing factors. These are discussed below.

The influence of statutory requirements for soil conservation by previous and current legislation was volunteered by a third of the interviewees. These individuals referred to the historical precedence of the 1941 Soil Conservation and Rivers Control Act and the 1967 Soil and Water Conservation Act and how the intent of these pieces of legislation had been incorporated into the Act's requirements. However, political priority may not equal the same level of priority given to on-the-ground works. As one planner stated:

> "at a council level we don't place much priority on soil conservation, ...but soil conservation is a priority in the political sense (as most of the councillors are rural landowners) and we service a rural population".

Hawke's Bay Regional Council staff considered that their budget allocation of three quarters of a million dollars was large, whilst at the same time indicating that the priority given to soil conservation was not particularly high. This may be a reflection

of this council's type of approach, where formal or policy commitments are low compared to other informal but expensive approaches such as education or works.

Interviewees from the Gisborne District Council considered that their low rating base was a significant determinant in the priority allocated. Being a unitary authority was also considered to affect the priority, with funding being more focused on infrastructure. A planner considered that primary infrastructure such as roading, sewage and water supply were the main priorities for council and consequently attracted the funding.

A regional councillor considered that soil conservation priority is to some extent determined by the community. He commented:

> "the perceived need and willingness of the public to pay for soil conservation helps to increase soil conservation's status within the council".

This also reflects the relationship between priority and the ability or willingness of the councils and or community to make financial commitments. The growing public awareness of environmental issues is also considered by community representatives to raise the profile of soil conservation.

Implementation Techniques for Soil Conservation

By asking interviewees to list the techniques their council used for implementing soil conservation and indicate the primary techniques used, it was hoped to gain an understanding of the rationale behind the selection of approaches. Most of the techniques cited by the interviewees were common to all three councils. The techniques listed included; soil conservation advocacy, education, subsidies and financial incentives, works (such as pole planting), regulation, rules, regional plans and environmental monitoring. The techniques given by the interviewees were not as extensive as those listed in the regional policy statements and regional land management plans, possibly because the most common techniques rather than a comprehensive list came to mind.

When asked to consider their primary techniques for soil conservation, nine out of the 12 interviewees suggested non-regulatory and participative approaches. A soil conservator considered that such approaches

> "encourage people to do the best for themselves through policies that allow this to happen".

Hawke's Bay Regional Council staff reasoned that their primary technique was an advocacy approach as the pastoral sector in the area had a history of non-regulation. This precedence reflects a political reluctance to take a "heavy handed regulatory" approach.

A Hawke's Bay interviewee suggested that while vegetation removal had been previously regulated, other non-regulated activities may have had similar effects or worse. The Council is now challenged by the public if it is seen to be inequitable. This forces Council to think whether rules will make a difference within their region, or if results can be achieved by other means.

The community representatives saw soil conservation works such as pole planting being the primary mechanism to achieve soil conservation. It is possible that interviewees have considered "primary"* to mean "most important for them". This gives the impression that those receiving soil conservation assistance (such as land users) see physical works as the most important technique for soil conservation. Because approaches such as education and advocacy are less direct, with no immediate signs of achievement, land users appear to less readily acknowledge their importance and purpose in achieving soil conservation.

A Gisborne District Council staff interviewee stated that at present regulation was their primary means of achieving soil conservation. This approach will change through the implementation of their proposed District Plan. He considered that:

> "education is the only way to change land use practices and that this approach would hopefully be better represented in the district plan".

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* The researcher considers that a primary mechanism is one that is fundamental or has emphasis placed on it above other mechanisms by the council.

Gisborne District Council demonstrates the change in thinking and approaches to soil conservation. The use of regulation and other prescriptive mechanisms is typical of pre- Resource Management Act regimes. Gisborne District Council is following the trend of moving away from the primary use of regulation to that of non-regulatory approaches.

Integration of Soil Conservation with other Resource Issues

Section 30(1)(a) of the Resource Management Act outlines the requirement for councils to achieve integrated management of natural and physical resources of the region. Interviewees were asked if soil conservation policy within their council is integrated with other resource management issues, and what were the benefits and disadvantages of policy integration. The responses show that integration is at a preliminary stage among the case study councils. Riparian management appears to be the first instance of integration of soil and water issues. The Resource Management Act gives emphasis to the protection and enhancement of water quality, hence water quality issues are a current focus for councils. As soil conservation is inextricably linked to water quality, the two are beginning to be targeted and managed together. For example, water quality is becoming an objective of soil conservation and soil conservation an objective of water quality. Thus the Act appears to be facilitating the development of multiple environmental goals.

The move to integrate resource management issues is a conscious move by councils. However, interviewees were able to identify a number of disadvantages or issues that need to be overcome before full integration at both policy and implementation levels can be gained. The complexity of issues was a common issue perceived by council staff. As one planner explained:

> "...if you have a narrow approach or focus (such as that given to the previous catchment boards) then it is easier to target and achieve [your objective], this becomes much more difficult when dealing with a number of issues".

Another planner identified the difficulty in getting enough information and historical data to integrate issues and to effectively monitor the progress. A councillor considered that:

> "it is harder to get public acceptance due to the difficulties in seeing how it directly benefits or effects them. The focus also becomes much more long term".

Some of the immediate disadvantages of integrated management were recognised to be beneficial in the long term. For example, most of the council staff considered that integrated management requires greater skills from individual staff members. This was seen as being particularly so for soil conservators who had worked within the old pre-Resource Management Act regime, now needing to take up new roles and skills. In the long term this was seen as a positive effect. Having multi-skilled staff was seen as a benefit by Gisborne District Council, where the public could identify and deal with one contact staff member for a number of closely related issues. It was also perceived that the size of the Gisborne region and the institutional nature of the council (having the functions of a local and regional council) allowed easier integration at both the organisational and implementation levels.

At a policy level, integration provides an opportunity to consider the environment as a whole, as promoted by the Resource Management Act. It also

> "requires people to think through the issues, enabling policy and implementation to become more closely knit".

Despite the initial difficulties identified with initiating and implementing an integrated programme for resource management, it was generally considered that in the long term there would be greater efficiency in the delivery of policy and in staff use and time. Another benefit identified by an interviewee is the opportunity to find measurable performance targets.

> "If policy says you are conserving soil, then all you can say you're doing is conserving soil, but if you say you are integrating this [with water] and having a target of having water 10 per cent cleaner in 15

years time, then it is possible to assess if you are achieving this, and interrelate that result to the application of soil conservation measures".

The Impact of the Resource Management Act on Soil Conservation

Theoretical Changes to Soil Conservation Approaches

Under the Resource Management Act regime, planning has theoretically moved from being prescriptive and coercive to more flexible and co-operative in approach. Interviewees were asked to consider whether they thought this had occurred for soil conservation. The response was varied with most interviewees identifying areas within the soil conservation planning process that have changed.

The Act's primary goal of sustainable management places soil conservation in the broader context of land management. In discussion, most council staff gave recognition to this broader focus, and the significant changes made to the process of planning for soil conservation. Some comments included

> "The Resource Management Act requires you to identify what you're trying to achieve. Then you can decide on techniques that will achieve this".

> "Greater emphasis on the planning process, but the results may not necessarily have changed".

These comments indicated that council staff recognise the flexibility and opportunities to improve planning and practice for soil conservation under the Resource Management Act framework. However, it is up to councils to utilise the Act's provisions to obtain better results for land management.

The nature of the planning processes outlined in the Resource Management Act is inherently long term. Interviewees considered that, while the length of time associated

with planning was at times frustrating, in the bigger picture it enabled a much broader and long term focus to be gained for managing land.

The requirement and processes for public consultation were commented on by half of the interviewees as being a significant change under the Act. Greater consultation was seen to allow a more co-operative approach to be taken. However, one planner noted that

> "there has been a change in the consultative process, but [the end result] may still end up regulatory".

Regional council staff, particularly those involved in the policy area of soil conservation, perceived a much greater emphasis on the process of planning for soil conservation. Although the broad and flexible regime brought by the Act is seen to be beneficial, it was noted that

> "there are no guidelines, so this slows down the process of sustainable management. Farmers are also finding it difficult to know what to do".

A Hawke's Bay community representative saw the co-operative approach as

> "putting the ball back to the landowners, which is good, but [has] the potential for some huge disaster (without regulation)".

Changes in Goals and Objectives for Soil Conservation under the Resource Management Act

The interviewees' perception of whether land management objectives and goals have changed under the Resource Management Act depends on whether they were involved in policy or operational issues. For example, those involved at the policy level unanimously agreed that the goals and objectives within the two management eras are different. The soil conservators and those involved in implementation highlighted the change in approaches to soil conservation, where works were no longer seen as important.

> "Previously soil conservation, was very 'doing' orientated. The works and rules were constrained by money, - choosing the cheapest

option, which was not necessarily the best. The Act focuses on finding the best option, which generally is not the cheapest. The Act allows greater recognition for [enabling] natural processes to occur. It is quite feasible to not be seen doing works, but the council must have a viable reason for whether to or not to undertake works".

Another major difference is that soil conservation, as previously promoted by central government, was to enable better or more efficient production on land. The emphasis is now less on productivity and more on achieving sustainable land management. A soil conservator comments:

"There is much greater awareness of the need to conserve land and the reasoning is stronger as to why the need to conserve land".

However, it was generally acknowledged that the purpose of soil conservation practice has always been to sustain land. All interviewees mentioned a philosophical shift with the Act's objectives of sustainable management and integrated management compared with the previous regime.

Facilitation and Implementation of Soil Conservation

Past soil conservation regimes have been criticised for their lack of focus and achievement. Interviewees were asked if they felt better equipped under the Resource Management Act regime to target and achieve soil conservation than under the previous management regime. It was left up to the interviewees to define 'equip', whether this be in tangible items such as funding and resources, or less tangible items such as the concept of sustainable management and the flexible framework offered under the Act.

Over 70 percent of the interviewees considered that their councils are better equipped to target and to achieve their soil conservation objectives under the new regime. All candidates were able to give examples of how they were better equipped. Some also added the disadvantages or problems that have occurred since the introduction of the Act. The removal of central government funding was perceived to be a hindrance by

some. Comments included "..statutorily better equipped, but not monetarily" or "..enabling but not better equipped".

The funding of regional councils through rates (levied on rate payers) and charges was considered favourable by most of the interviewees. Regional funding was perceived to have direct benefits. These include the independence of regional decision making, allowing greater public participation. The regime was also seen to increase the accountability of councils to their regional communities. A planner saw improvements through being able to tailor soil conservation more to the region. However, because the Act does not give strong legislative direction, a council can also choose to do nothing. It was also perceived that the council could be more susceptible to persuasion as over half of the councillors were rural landholders and had the potential to be influenced by other rural land users.

A Hawke's Bay Regional Council planner saw the overlap of land management functions between territorial and regional councils as a problem. This suggests the need for liaison with constituent authorities to ascertain who is better equipped to deliver specific land management functions and to avoid the overlap of services.

Gisborne District Council staff acknowledged the flexibility allowed by the Act, especially through the provision of a wider range of tools available. They considered that their low rating base was an impediment in being able to choose from the variety of tools available and were forced to choose the most cost efficient approaches. It was considered that greater funding would enable this council to take up more of the opportunities to improve land management enabled under the Act.

The Functions of Those Involved in Soil Conservation

The Soil Conservation Role of Regional Councils

The majority of those interviewed saw the soil conservation function of their council as one that sets an overall direction or focus, with their council being the central agency for soil conservation. A planner reasoned that:

"soil conservation was one of the regional council's key functions, a key reason for the council's existence".

A soil conservator considered criticism of council staff not being seen enough of in the field was often a reflection of the roles played by previous (prior to the Resource Management Act), soil conservators'. Councils now see their role as being one of advocacy rather than implementing soil conservation works, such as planting trees.

Many interviewees also saw their council as holding expertise and information that is not available elsewhere. Those representing community interests saw their regional councils in a role of leadership and facilitation along with acknowledgement of council staff expertise. A community representative saw their council as

"the promoter of soil conservation, ...who owns the 'soil conservation message'...and uses a variety of guises to sell the message".

The Soil Conservation Function of Central Government Agencies

Central government agencies have only indirect input into soil conservation at the regional level. Most council staff acknowledge the Ministry for the Environment's input into the regional policy statements and plans through the submission process. Regional examples of central government input were given, such as the East Coast Forestry Conservation Project and central government funding for Landcare groups in the Hawke's Bay. The Ministry for Agriculture and Fisheries was also cited as a central government agency having indirect input through research efforts and the promotion of sustainable agriculture. Various council staff members listed a range of central government documents relevant to land management.

Interviewees were asked if they would like to see central government having greater input into soil conservation at the regional level. This sparked some strong views and comments about central government's roles in both past and current contexts. The Manawatu-Wanganui Regional Council was unanimous in its answer that, as a council, they were happy for central government (particularly the Ministry for the Environment)

to stay at the policy level (for example, through the Resource Management Act structure). A Manawatu-Wanganui regional councillor stated that:

> "the model that regions look after themselves is good, and that the regional rating system is sufficient to allow the Council to undertake activities required for the region".

Most of the respondents said that central government funding would be desirable, however, some counteracted this by saying that they could not accept central government funding with "strings attached".

Most of the discussion was based around Ministry for the Environment's function. As a council staff member stated:

> "The Ministry for the Environment is well placed to provide input from a central government level".

Most council staff were able to suggest a number of ways Ministry for the Environment could improve this input. The most frequent suggestion was that the Ministry be more involved through the use of their expertise and provide a service that collated and co-ordinated regional information. As expressed by a council policy analyst: -

> "...be a clearing house for ideas and information and to service the exchange of information".

Interviewees expressed the difficulties currently being experienced in environmental monitoring and perceived the need for more consistent and co-ordinated methods for gathering information. The Ministry for the Environment was seen as the relevant agency to co-ordinate this so that all councils undertake similar types of monitoring. It may be appropriate to include monitoring initiatives and outlines in the Ministry's proposed National Sustainable Land Management Strategy.

The Ministry for the Environment's current level of input was seen to be reactive, particularly through their submissions on plans. This is seen as unhelpful and often too late. It was recommended that they be more

"proactive and strategic and long-term rather than [producing] short term ideas and documents".

It was suggested that, in order to get a better perspective of the real issues facing councils, staff from the Ministry should get out into the regions and consulted with regional council staff.

Council staff were asked about their awareness of the Ministry's National Sustainable Land Management Strategy and their opinion of the relevance and usefulness of the document for their council. Most were aware of the document, but generally considered that it did not contain any new ideas or initiatives, or have any direction enabling councils to undertake better land management. Manawatu-Wanganui Regional Council staff considered that the Strategy was too late as they had already formulated their regional land management plan. The Strategy however, may be useful at the plan review stage.

The Soil Conservation Function of Regional Agencies and Groups

Interviewees listed other agencies and groups that had input into soil conservation within their region. These included (in order of most frequently mentioned to the least mentioned); Federated Farmers; Crown Research Institutes such as Landcare Research; District Councils; Department of Conservation; Forestry Sector; Maori and environmental groups; and other neighbouring regional councils.

For regions such as the Hawke's Bay and Gisborne, increasing interest and input into land use and management is being made from the forestry industry. In the Hawke's Bay, the forestry sector is well co-ordinated and has strong liaison ties with the Regional Council. Landcare Research also has input into the Hawke's Bay through their land management research and monitoring projects. The Federated Farmers Organisation have their own guidelines for sustainable land management which is acknowledged by the councils. Maori are the only group that are actively pursued to participate in council issues. The Gisborne District Council is experiencing increasing iwi input at the policy level, with one iwi management plan for a part of the region being operative. Because of the widespread recognition given to Gisborne's soil

erosion problems, several national environmental groups have made submissions to relevant plans, such as the Royal Forest and Bird Protection Society and Maruia Society.

District councils appear to have a varying level of input in the three regions. Within the Manawatu-Wanganui region, input of the district councils is only minor. Both Hawke's Bay and Gisborne Councils have strong ties with Wairoa District Council.

Consultation and interaction of the three councils with other local authorities is generally at a staffing level. Some of the case study councils demonstrated the close networks established between the staff and some councils. Other councils appear to act more in isolation with little contact and interaction with other councils in their region. The interest groups represented by community interviewees all received different levels of support. For example, the Landcare group representative received a high level of funding and support from council staff and resources. Other groups such as the Fish and Game Council and the Federated Farmers Organisations did not receive any funding, but were quite content with the level of support and encouragement to participate from regional councils. As one representative stated;

> "Financial independence means we have the option to oppose the council if we need to".

The overall impression gained from the interviews with community representatives was that community groups were required to take initiative rather than rely on council staff to approach their organisations for their input. However, the councils do use methods of consultation, such as drawing on submissions on annual plans, regional policy statements and regional plans to take these organisations' views into consideration. Clearly, there are different views on the adequacy and efficacy of consultation by councils.

Identification of the Links Between Soil Conservation Practices and Outcomes

Community Support and Accountability

When regional council staff were asked if they thought their community supported their council's soil conservation programmes, the general response was affirmative. However some staff volunteered that it was difficult to accurately gauge community support. Manawatu-Wanganui Regional Council staff considered that the lack of submissions made against their budget allocation for soil conservation in their annual plan indicated acceptance. However, the council has not increased the rates for some years so people are generally accepting of what the regional council does, particularly in respect to budget allocations.

Hawke's Bay Regional Council is increasing their currently limited initiatives in measuring customer awareness and support. They consider submissions on the annual plan, regional policy statement and plans to be the most formalised recognition of support. Interviewees from this council also used examples to demonstrate support, such as the demands for services, the pre-selling of poles for conservation works, and individuals within the community taking action on their own account. Resident feedback to individual staff was also included.

The community representatives were generally in support of their councils' soil conservation programmes, though all thought improvements could be made. The community representative for the Manawatu-Wanganui considered that the council's current soil conservation programme was adequate, however they could expand current measures to obtain more effective and efficient land management.

Hawke's Bay Regional Council community representative:

> "They have my support in the short term, but if it doesn't work, then they have to change; if the carrot won't work, then use the stick".

Gisborne District Council community representative:

> "Would like to see more money and more works and assistance".

The Long-Term Outcomes of Soil Conservation Works

Council staff were asked whether they had any mechanisms to ensure that soil conservation works are effective in the long term and how enforceable these mechanisms are. The responses show that the councils' approach to the long term outcomes of soil conservation works are varied. Manawatu-Wanganui Regional Council predominantly uses monitoring techniques, whilst acknowledging that it is very difficult to measure the progress and achievement of policies and works. While Manawatu-Wanganui Regional Council provides some funding for soil conservation works to individuals, they have no specific enforceable mechanisms (such as provisions for prosecuting those that destroy or neglect works), and rely on land user education and good will to ensure the continuation of these works. The community in general is seen to act as watchdogs and help to enforce good practices through peer pressure.

Hawke's Bay Regional Council uses a combination of education, covenanting and regulatory measures to enforce a commitment to achieving positive outcomes of soil conservation works. Regulatory measure such as abatement notices and prosecutions are used as a bottom-line or last resort threat. There is also a recognition of market mechanisms being at work. For example, pastoral farmers are under pressure to maintain the land and gain viable production from it. The forestry industry is currently buying land for production forestry where erosion has made land unmanageable and uneconomic for pastoral farming. There is also a reliance on wider international markets where horticulture, such as on the Heretaunga Plain, needs to be produced in an environmentally sound manner, otherwise trade barriers may restrict exports.

Gisborne District Council uses a combination of low key monitoring, a reliance on good will and resource consent conditions to ensure the continuation of soil conservation works. Where funding is given by the Council for soil conservation works, a 99 year agreement is made that includes certain provisions, such as the requirement to replant if trees for soil conservation purposes are removed. The Land Improvement Agreement under the 1941 Soil Conservation and Rivers Control Act is also used. Trees that have been planted for soil conservation purposes require a resource consent before felling.

Annual Plan Measures for Soil Conservation

The Annual Plans of the three case study councils contain funding provisions for soil conservation as well as specific performance measures. The degree to which these plans are followed is variable. The Manawatu-Wanganui Regional Council uses their annual plan as a working document, compared to Gisborne District Council which gives greater priority to their regional policy statement and plans. The Annual Plans allow the public to be informed on the activities undertaken for land management and the budgetary provisions for these activities.

Chapter Six

THE IMPACT OF THE RESOURCE MANAGEMENT ACT ON SOIL CONSERVATION

The overall research aim of this thesis is to determine how and to what extent soil conservation is changing under the Resource Management Act. Out of the findings key themes have emerged. These include: the change in the focus of soil conservation and the impacts, the diversity of approaches taken by councils, soil conservation roles and levels of involvement, and factors of long term planning and accountability. Analysis of these themes highlight the current approach and status of soil conservation and the various consequences. Sections of the Resource Management Act referred to can be found in appendix seven.

Changes in the Purpose of Soil Conservation

Under the Resource Management Act regime, planning has theoretically moved from being prescriptive to allowing greater flexibility. This has had an impact, with certain aspects of soil conservation under the new legislation experiencing considerable change.

The most significant change is the definition of soil conservation. Under past Acts (such as the Soil Conservation and Rivers Control Act, 1942 and the Water and Soil Conservation Act 1967), the primary goal was to promote soil conservation, whereas the Resource Management Act offers the primary goal of sustainable management. Under this broader focus, soil conservation becomes only one part of achieving sustainable land management practice. The second major difference is that the Act is driven though outcomes that are based on the environmental assessment of effects, rather that through activities based prescription (May et al., 1996). This means that the focus of management is effects-driven rather than activity-based.

Many councils acknowledged the difficulties in defining and obtaining unanimity on the specific issues in achieving sustainable land management within their regions. This

indicates that sustainable land management can be considered a 'meta-problem.' Meta-problems are distinguished by such characteristics as difficulty in reaching a consensus definition of the problem, with the need for multiple disciplines and perspectives (Blackford et al., 1993). Analysis highlights the difficulty in gaining regional application and definition of sustainable land management. The problem of defining sustainable land management for specific regions needs to be overcome, so that councils can set achievable objectives that can then be translated into policies and methods.

A significant change to soil conservation identified by council staff was that of the processes required for planning. The Act provides comprehensive procedures to enhance decision making. These include the mandatory writing of regional policy statements, plan preparation, the assessment of environmental effects, resource consents consultation and the review of policies and plans. Staff interviewed commented on the process as being much more complex. This differs where soil conservation was previously action orientated and done on a project by project basis, to now where long term planning of a broader range of issues is essential. The requirement to consult and the process for consultation (such as submissions and hearings) was considered to be long and involved.

Interviewees generally considered the greater emphasis put on the planning process by the Resource Management Act to be an improvement, however some were cynical about the end result. As one planner commented

> "...greater emphasis on the planning process, however the results may not necessarily be any better."

Discussions with council staff gave the impression that, although the Act provides a more comprehensive framework and processes to enhance land management planning, the council and individuals within it need to be committed to fully undertaking these processes in order to obtain benefits.

Previous soil conservation regimes were criticised at local levels for their management approaches simply working on dogma from central government and often having little

regional relevance. With a more comprehensive planning structure, councils are required to start afresh. This allows councils and their communities to begin by asking "what are we trying to achieve"?

Planning processes and the duty to consider alternatives, assess benefits and costs (section 32, Resource Management Act, 1991), compels councils to have a comprehensive justification for their objectives, policies and methods. This can only enhance the quality of planning and overall environmental outcomes. Such provisions are considered by those involved in administering land management to enable councils to be better equipped to target and achieve soil conservation. This does not necessarily include councils being better resourced or funded.

Integrated Management

Section 59 of the Act states that the purpose of regional policy statements is to integrate management of the natural and physical resources of a region. The integration of soil conservation into the broader focus of land management or sustainable land management by most councils illustrates that initial steps are being taken towards resource integration. Some councils have also formulated policies and approaches for riparian management that amalgamates water and soil issues. Regional councils are currently seen to be struggling with the complexities involved in integrating natural resource management. The councils studied indicate that a conscious effort to integrate resource management issues is being made. However there are a number of obstacles that need to be overcome. A planner identified the difficulty of obtaining enough information and historical data to integrate issues and to effectively monitor their progress.

Another obstacle is the lack of skills among staff to take up the new roles required for integrated management. Staff involved in the implementation side of land management are recognizing their job description has changed from the narrower focus of soil conservation and that they need to improve their skills to meet the demands under the Resource Management Act.

Integrated management also requires policy and implementation phases to be more closely knit. This requires people to think through all the issues and effects, enabling a more holistic approach. As a soil conservator commented

> "...policy as well as works and education approaches need to be integrated, when they are all tied together it makes a comprehensive package."

The co-operative style of planning under the Act encourages organisational integration. The philosophy behind the devolution of responsibilities to regional and local councils was to enable greater interaction and co-operation of councils carrying out complimentary functions (May et al., 1996). However, the Act does not give specific directives for this integration. The research shows that only limited organisational integration has occurred and councils need to initiate their own linkages between other councils that best address regional issues and objectives.

Under the hierarchical planning structure, regional plans and policies provide guidance to constituent local authorities. For this to be effective they need to be developed in consultation with adjoining authorities. The research findings indicate that councils are generally planning in isolation with little input from constituent and neighboring local authorities. For a more comprehensive and efficient approach to land management, interaction needs to be improved. Hawke's Bay Regional Council and Wairoa District Council provide an example of closer regional integration and shared land management roles. The Regional Council's lack of rules for land management has seen Wairoa District Council develop and implement rules within their district plan for land management.

Approaches to Soil Conservation Planning and Practice

The plan coding results and case study interviews show that there is a diverse range of approaches and techniques taken by councils throughout New Zealand for soil conservation and land management. There are a number of reasons for the disparities in approaches. These include the physical regional differences, institutional and political influences and barriers, different community aspirations and perceptions and

the level of funding and resources held by a council. These factors together in part or in sum also effect the achievement of soil conservation.

The lack of directives for soil conservation in the Resource Management Act leaves the interpretation and the type of approach for soil conservation entirely in the hands of regional councils and their communities. The flexibility of the Act lies in the ability of councils to choose different approaches and methods to implement objectives. The Act does not prescribe how to implement policies, but provides a process for councils to use to assess the best approach for land management through section 32 - the duty to consider alternatives and assess benefits and costs. Such a regime results in a great deal of diversity in councils' approaches to soil conservation policy and practice.

With regional differences in soils, climate and land use, soil conservation objectives will vary between the regions. Flexibility allows regions to tailor approaches and techniques to their regional environments and communities. The variety of approaches available also means that the right technique or combination of techniques can be selected where most appropriate. Familiarity with the nature of local problems, the use of local innovation, cost saving approaches and effective policy implementation adds to the advantages of regional approaches (Delamore, 1989).

Some approaches are consistently used by most of the councils. They can be divided into two groups. Approaches such as information provision, education and advocacy, community groups, codes of practice and guidelines, are considered to be participative approaches. These encourage participatory structures between the councils and their community to achieve mutually agreed objectives. The second suite of approaches are considered regulatory or prescriptive. These approaches such as rules and regulatory mechanisms, council coordinated groups and service delivery, are characteristic of an interventionist and centralised style of planning typical of the pre-Resource Management Act era.

Participative Approaches

A participative style of management is the most frequently used by all councils, where education, advocacy and information provision are characteristic of all councils' approaches. The choice of participatory and non-regulatory approaches for soil conservation can be seen as a reflection of the recent shift in thinking, and the management regime that has evolved alongside it. A paradigmatical shift (as discussed in Chapter Three) in the management of natural resources, encourages a change in the mode of thinking and the principal motivations underlying land management. This approach aims to increase the understanding of land users and their part in land management.

Woodhill et al., (1992) states that for soil conservation to be achieved, councils need to build within communities' approaches that develop and enhance understanding, commitment, knowledge, skills and resources. The research shows that this approach is being facilitated through information provision, education and advocacy.

Effective community participation is also obtained through the empowerment of individuals within the community. This requires adequate power, responsibility and accountability and the necessary skills, abilities and resources to be available at the grass roots level (Bartelmus, 1994). The recent resource management law reforms and the reorganisation of central and local government have provided the scope for this to happen. The planning approaches of councils are drawing on these concepts to promote changes in land management by first changing the communities' perception of the problem and suggesting how it should be managed. A staff member of the Manawatu-Wanganui Regional Council rationalises their use of extension and advisory services in the following way:

> "The regional council believes advisory and extension services are the most successful and efficient way to convince landowners that soil conservation is important to them, then there is more chance to achieve it, rather than the Council telling them what to do."

Co-operative management such as seen in Landcare groups is likely to develop within groups or organisations that already have a cohesive social system and a common interest or issue. Landcare groups set up in the Hawke's Bay region have been successful in achieving their particular land management objectives. Gisborne District Council intends to encourage and assist Landcare groups within their region. However, they may find it difficult due to a more spatially diverse population. It may also be possible that the scale of the land degradation problem within the Gisborne region is too great for farmers to address, even in groups. Because the Gisborne region is familiar to external (predominantly central government) initiatives and support, a shared approach may be more appropriate. This approach would see community groups such as those set up under the Landcare framework, define the problems, with the District Council providing technical advice and a percentage of the funding. However, if the Council is unable to find sufficient funding, then central government funding may be necessary. Cost sharing programmes such as these should be carefully targeted and monitored. A contractual agreement between the two parties will ensure some degree of long term accountability.

With goals of greater economic and resource efficiency, councils need to look for approaches that are both efficient and effective. It may be appropriate in some regions to base cooperative land management approaches on existing organisations. A good example of this is the Hawke's Bay and Wairoa Federated Farmers "Guidelines to Pastoral Farming." The Hawke's Bay Regional Council has played a role in contributing and supporting the information in this document. Continued support and the dissemination of the document will assist in the council's promotion of good land use practices.

Codes of practice or environmental guidelines are techniques that are increasingly being used and assessed as to their potential for land management. Codes of practice may be prepared with specific groups to provide guidance on management practices. They also have the potential to be linked to industry standards. Groups such as the Forest Owners Association and the Logging Industry Research Organisation have taken initiatives to coordinate appropriate research findings and to set their own codes

of practice. This demonstrates a self regulation approach, but to some extent, also highlights the lack of national and regional coordination for environmental guidelines for this activity.

Councils' commitment to non-regulatory and participative approaches is difficult to assess. The amount of commitment and effort that is put into such techniques, compared to physical soil conservation works is hard to measure. Unfortunately, the annual plans of the case study councils do not give specific details of how funding is allocated within land management so it is difficult to substantiate the level to which objectives and policies are undertaken. Hawke's Bay Regional Council's 1995/1996 Annual plan does allocate significant funding of $250 000 out of a total land management budget of $678 000, to its Regional Landcare Scheme, which encompasses participatory approaches for land management.

Regulatory Approaches

Regulatory and prescriptive approaches specify outcomes by setting standards, issuing directives or requiring permits. These measures directly confine choices and fail to address economic and social circumstances of particular land users (Braden, 1991; Delamore, 1989). In the past, regulation for land management in New Zealand has been seen to be reactive and generally ineffective. The plan coding results indicate that prescriptive and regulatory techniques are still being widely used. Councils generally have rules for land management, however other techniques include emergency action provisions such as abatement notices and enforcement orders. In practice many councils are still writing restrictions on land use into policies and plans, on the grounds that they are needed to prevent 'adverse effects' whether actual or potential.

The degree to which councils are moving from regulatory to participative approaches may be reflected by their regional institutional and political limitations and circumstances. Institutional limitations relate to the levels of funding and resources available for land management. Staff numbers and skills may also dictate the approaches taken, as regulatory approaches are often less complex and cheaper to apply. A council that lacks leadership or the resources to take more innovative

initiatives for soil conservation may continue to use regulation as a primary technique until they are in a better position to change. Limited funding may also mean competition for limited resources. Programmes or approaches that have short term benefits may be preferred to longer term issues (such as the prevention of soil degradation), and result in political pressure being applied.

The case study councils provide insight into why both participative and regulatory approaches are being used. Hawke's Bay Regional Council uses cooperative approaches as well as abatement notices and enforcement orders. These coercive or prescriptive measures are used as a bottom line or last resort approach should the participative approaches fail.

Gisborne District Council primarily uses rules to manage land. This approach is administered from the Vegetation Removal and Earthworks Regional Plan. A planner expressed the desire to change from the prescriptive approach to one that allowed greater scope for soil conservation advocacy and education. This change in approaches will be reflected in their proposed district plan. Though slower than other councils, Gisborne District Council also follows the trend in moving from regulatory to participative approaches.

The literature recommends a combination of both regulatory and non-regulatory approaches for achieving successful land management (Dalton, 1985; Jakobssen, 1991; Lusser, 1993; Streeting, 1993). Non-regulatory approaches that encourage communities to help themselves through the provision of information, technical advice and resources should be an initial and primary approach. Regulatory approaches such as rules and the consent process, abatement notices and enforcement orders provide a legally defensible bottom line should the other approaches fail.

Regional Plans

Most regional councils indicate (through their regional policy statements) the intention of writing regional plans to address land management and soil conservation issues. Currently seven councils (four regional councils and three unitary authorities) have

operative regional land management plans. Regional plans can target areas of resource conflict, providing a strategy to easily deal with large numbers of resource consents and allow the community to set its own goals, objectives and methods for achieving them (Braden, 1991). Staff interviewed at the central government level foresee regional councils choosing to write regional plans that are specific to their particular regional issues. For example, the West Coast is unlikely to have a plan dealing with pastoral land degradation, but rather a plan for resource mining that is more relevant to the region.

Regional Differences in Approaches

Regional diversities in land management impedes upon industry. A planner from the Hawke's Bay Regional Council noted that strong calls from large resource user groups were being made for regions to have greater national consistency in land management approaches. Lower environmental standards in particular regions may also attract business development and increase the potential for environmental degradation. Staff interviewed from central government acknowledge that legislation is not being applied uniformly, and indicated that it is unlikely that central government will intervene to remedy this. It appears that short term variation in approaches is acceptable from central government's point of view. It is possible that within a period of time the regional diversities may even out after a time of trial and error with greater national uniformity achieved.

It is also possible that the acceptance of regional diversities from a national level may be irreversible in the long term. The inability to apply effective soil conservation measures may see certain regions moving away from sustainable land management rather than towards it. In the short term this appears to be happening to the detriment of the land in specific regions. This may continue into the long term and restrict the opportunities for both current and future generations.

Issues of Ownership in Soil Conservation

The historical structure of soil conservation in New Zealand has seen funding and policy initiatives come from the central government level. The implementation of these

initiatives have been at the catchment board or regional level, where few structures or avenues existed to allow landowners to have input into soil conservation policy or decision making. The type of works employed within regions were often subject to funding obtainable, rather than suitability to particular land problems. However, since the 1980's, soil conservation policy and programmes have moved towards a more 'people centered' and participative management approach.

Campbell (1991) states that sustainable land management will never be achievable unless land users are committed to it. This requires them to be involved in the planning, development and implementation phases to the point where they assume responsibility. It is also necessary for the community to access or be given key resources, such as information, funding, expertise and encouragement. The Hawke's Bay Regional Council could be considered to have taken the biggest step (in comparison to the other case studies) in devolving resources to the community. Their Landcare scheme will provide up to 50 percent subsidy for sustainable land projects such as planting on erosional land. Landcare groups are also assisted through field days, staff expertise and access to organisational resources.

Within policy statements and regional plans very little formal or legal expectation is placed on regional communities to manage or be involved in soil conservation themselves. Most councils provide a detailed outline of their policy and implementation roles of soil conservation. This illustrates that councils still predominantly "own" soil conservation - the problems as well as the management solutions and there is little expectation placed upon local business and communities to play a specific role in soil conservation. The rationale for this may be linked partially to the directives under the Resource Management Act, where it only places an expectation on the public to not contravene or go beyond certain environmental bottom lines. Any role beyond this is not outlined.

However, councils are taking some subtle approaches to educate communities about their roles and responsibilities for land management. Encouragement of Landcare groups is one approach that allows for greater community ownership of resource

issues. It is also possible that the community needs to take the first step. A regional councillor for the Manawatu-Wanganui Regional Council stated that Landcare groups would be assisted by the council only if various individuals approached them for help. This Council was not looking to form such community groups itself. A soil conservator also stated:

> "We don't have the time or the resources to get out in the community so people have to take the initiative and come to the regional council."

Techniques such as Landcare Groups, technical and educational programmes often rely on community involvement, responsibility and cost sharing. Hence the success of various soil conservation approaches is also determined by a community's enthusiasm, cooperation and commitment to see sustainable land use achieved.

Many of the larger community groups such as the Federated Farmers Organisation, environmental groups and the Fish and Game Council, appear to have given themselves functions. Their interests in land management and the functioning of their regional council varies respective to their particular interest. These self-appointed functions are generally encouraged by council. Industry groups such as the forestry sector have also taken initiatives for responsibility in land management, with the formulation of codes of practice and guidelines as discussed earlier.

Central versus Regional Responsibilities for Soil Conservation

The soil conservation role of central government has changed significantly over the years. Historically soil conservation policy and practice has been directed and funded from the central level. Now under the new resource management framework and with the formation of regional councils, soil conservation functions have largely moved from the central government to the regional level. The majority of regional councils have embraced their new management style and welcome the increased level of responsibility for formulating, funding and implementing regional activities. Interviewees indicate that central government funding is still desirable, but there is a general unwillingness to return to similar regimes of previous catchment board, where central government funding was given only when various conditions and agreements

on how the money would be spent were agreed upon. With the majority of funding for regional councils coming from regional rates, some regions are in a more economically viable position that others to administer land management functions. Variations in the regional economies of the case study councils clearly demonstrates this. The Manawatu-Wanganui Regional Council has the fifth highest regional population which provides it with a high ratable population. As a regional councillor in this region stated: "The rates of the region are enough to do what is required for the region."

In comparison, the Gisborne region has a small population for its land area and is less prosperous. Interviewees from this council frequently commented on the low rating base as a restriction in implementing their soil conservation functions and responsibilities. They also have had a large degree of intervention from central government into the management of land and find it especially difficult to now operate solely on a regional basis. Because of the large extent of soil erosion problems in the region and the low rating base, Gisborne District Council considers it is inadequately resourced to effectively combat soil erosion. The Ministry for the Environment acknowledges the variation in regional funding, but makes it clear that it is individual council's responsibility to change this situation and central government cannot be expected to intervene.

The independence given to councils allows them to undertake revenue generating operations. For councils such as Gisborne District Council that has limited financial resources and considerable land degradation problems, there is potential to be involved in investment within their region. Either on their own or (more feasibly) in partnership with forestry companies, councils could invest in production forestry on land that is susceptible to high levels of erosion. This method serves two purposes, initially where in the first eight years the council's investment is primarily in conserving soil, and then over the next 20 years the investment is conserving soil as well as producing timber. At harvesting time, the revenue generated could be reinvested into similar environmental programmes.

As councils grapple with their new roles and responsibilities under the Resource Management Act, it appears that each council is experiencing similar hurdles in undertaking the processes of research, policy formulation and implementation, creating an unnecessary duplication of processes and experimentation and at times errors. Despite regional differences, the process of planning for soil conservation and its implementation are similar and councils would benefit from some clear direction from central government.

The Ministry for the Environment has disseminated considerable information on general issues surrounding the implementation of the Resource Management Act. A lot of this material has been criticised by practicing planners as being too 'vague and conceptual' to assist them in addressing day-to-day concerns of plan making (Berke, 1994). A soil conservator interviewed considered that this may be improved through central government staff having greater contact with regions and their issues.

The Ministry for the Environment and the Ministry of Agriculture and Fisheries were recognised by regional council staff to hold considerable expertise and knowledge. From the regional perspective, these central government agencies have a role of information gathering and dissemination that they are not adequately fulfilling. As one planner stated:

> "Ministry for the Environment could have greater input through being a clearing house for ideas and information and to service the exchange of information."

The Ministry for the Environment also has a comparative advantage in providing information and research dissemination, where smaller regions cannot capture all the benefits and so have less incentive to provide these goods (Braden, 1991).

The Ministry of Agriculture and Fisheries could also contribute to encourage and assist regional councils in achieving sustainable land management. Monitoring the sustainability of agricultural land management on a nationwide basis along with monitoring of the extent to which regional implementation of land management

practices impacts on farming will assist in information provision (Clough and Hicks, 1993).

A forum of relevant council members from each council may be an appropriate method in which greater regional co-ordination and information exchange can be obtained. Councils that have operational land management plans or other established approaches are well positioned to share valuable experiences with councils further behind in the planning process. However this initiative must come from within regional councils as staff interviewed from central government reinforced the regime of allowing regions considerable autonomy.

With most policy statements close to being operative, regional councils can now focus on specific issues such as land management and begin to formulate plans or other approaches. Because this is the first round of plans most councils have opted to have a short review time (less than the five years required by the Resource Management Act). This provision will enable councils to change their approaches if necessary. Greater regional co-ordination and information exchange would assist these reviews.

Monitoring

The plan coding and case study findings indicate a wide variation in the degree and type of monitoring being performed by councils. Council staff interviewees acknowledged the need to improve the monitoring of their regional environments, and indicated their desire for the Ministry for the Environment to provide greater direction in this area. As an interviewee stated:

> "...hope that the Ministry for the Environment comes out with a nationally consistent way of monitoring the state of the land resource so that we are doing the same types of monitoring."

To objectively evaluate soil conservation performance, a set of common parameters and objectives is required. It would be helpful if these were available on a national basis. Such measures will indicate in ten years time which way the state of the environment is moving. Both central and regional government need to work together

and assess what is currently being monitored, where the gaps are and the best ways to achieve information for monitoring on a nation wide scale.

The Minister for the Environment is obliged to monitor the effects and implementation of the Resource Management Act (Section 24, Resource Management Act, 1991). The Ministry also has an obligation in ensuring that the methods chosen for the achievement of land management are successful. At present this is undertaken through the Ministry's submissions on regional policy statements and regional plans. A primary factor in determining the success of regional councils' approaches will be through monitoring results. This reinforces central governments need to be involved in the coordination and direction of regional monitoring programmes.

Without an improvement in the co-ordination of information, research and monitoring provisions, there is a risk that councils will be unable to implement the standards required of them under the Act. By the time it becomes evident that various approaches are unsatisfactory, the cost and detriment to land may be significant and irreversible.

Sustainable Land Management Strategy for New Zealand

The Ministry for the Environment has indicated an interest to participate in land management at a national level through their proposed Sustainable Land Management Strategy for New Zealand. The Strategy outlines the Ministry's land management role and is in response to:

> "The national significance and complex nature of current land use issues, and the need for coordination of the wide range of individuals, groups and agencies which will play a part in meeting the challenges presented by these issues"(Ministry for the Environment, 1995, 18).

Figure 6.2 illustrates the Ministry for the Environment's initiatives taken for land management. Action plans under the Sustainable Land Management Strategy (yet to be formulated) will include market mechanisms, codes of practice and standards that can

be adopted by regional councils. The fourth phase could see guidelines produced for regional councils on how to write appropriate rules and ways to address issues.

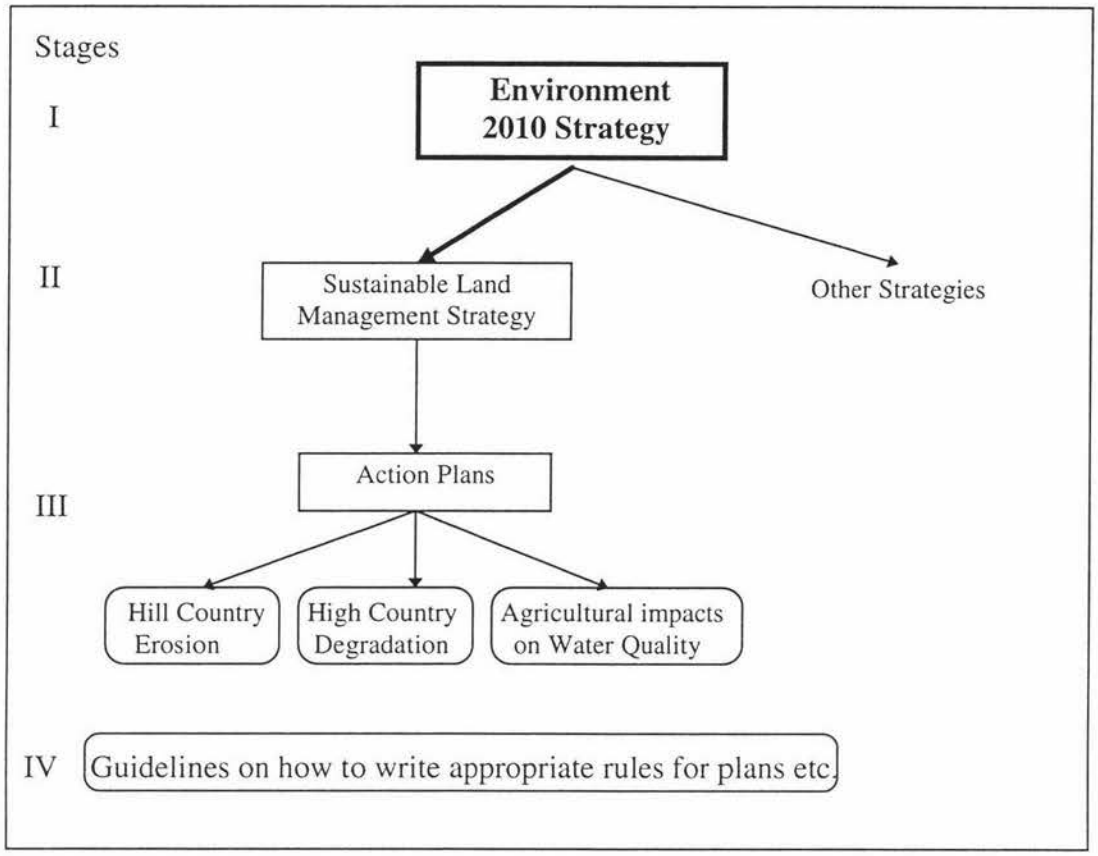

Figure 6.2 Hierarchy of Land Management Documents at Central Government Level

Although the Strategy states that the Ministry for the Environment has a role in ensuring consistency through the overview of sustainable land management in New Zealand, they fail to indicate exactly how they will ensure this consistency, especially as the Strategy is not mandatory.

Provisions for Long Term Planning and Identifying Links Between Soil Conservation Practices and Outcomes

An objective of the research was to determine whether soil conservation policies and practices under current resource management structures ensures a greater degree of long-term planning and accountability. Links between soil conservation policies and practice and their outcomes allow councils to monitor the effectiveness of programmes.

In the past catchment boards have preferred to encourage soil conservation works which attract government subsidies (Jakobssen and Dragun, 1991). Landowners' commitment to soil conservation works often extended only as far as what government subsidy money would pay for. The short sightedness of previous soil conservation efforts was highlighted in the unsuccessful and ineffectiveness of works to abate soil erosion.

The current management regime requires councils to have greater institutional and economic accountability. Few regional plans contain mechanisms to ensure the continuation or maintenance of current soil conservation efforts. Interviews reinforce this position with council staff agreeing that they have few statutory provisions, but place a greater emphasis on informal obligations for soil conservation works. This predominantly relies on the goodwill of the benefactors of soil conservation works. A reliance on goodwill aligns with the type of participative approaches used by regional councils for land management. Educating land users about the necessity of managing land sustainably and techniques for doing so, enhances understanding of long-term planning and the need to maintain soil conservation works.

Growing environmental awareness amongst the community in general is observed, where the community acts as 'watchdogs' reporting on environmentally unsound actions. Peer pressure also helps to reinforce good land management practices. This signifies the community taking on greater responsibility to the use of land.

For those councils that provide funding for works, few have specific mechanisms to hold the recipient of this funding accountable to their soil conservation agreement. This appears to be out of place in today's environment of economic accountability and scrutiny in the spending of public funds.

Lack of specific provisions in council plans for assessing soil conservation outcomes are to some extent being fulfilled through the Resource Management Act's requirement to monitor the state of the environment. At present, councils' provisions

for monitoring the state of the environment is at an initial stage, with few councils assessing the progress and achievement of soil conservation policies and works. Most council staff interviewed acknowledged the need for a more comprehensive monitoring system with this being a current priority. The lack of sufficient monitoring can be linked to the call for the Ministry for the Environment to be involved in the co-ordination and direction of regional monitoring programmes.

Commitment and Priority Given to Soil Conservation by Councils

The research shows that every council has some level of provision for soil conservation. This is predominantly a reflection of the Resource Management Act's provisions in section 30(1)(c), where soil conservation is listed as a function for the control of land. However, no definition or directives are given for soil conservation. The Act looks at managing natural resources from the view of "effects"-not as soil conservation, but as erosion. In this light it affords the need for soil conservation (through the occurrence of soil erosion), the same priority as any other effect, and councils are left to determine this priority regionally.

Discussions with council staff and councillors indicate that a number of factors influence the level of priority and commitment to soil conservation within a council. These factors include the influence of historical precedence, such as previous soil conservation legislation and its implementation within a region. Prior to the Resource Management Act, soil conservation received a high profile due to specific legislation (such as the Soil Conservation and Rivers Control Act 1941, and the Water and Soil Conservation Act, 1967), the presence of regional catchment boards, the prominence of soil conservators in the field and the visual effects of soil conservation works. This has to some extent continued to give soil conservation a relatively high profile within the community. Community representatives interviewed reinforce this notion with their referral to the "high profile of soil conservation within their areas", and the use of the terminology "soil conservation" rather than "land management" or "sustainable land management."

The commitment of councils reflects their capacity to demonstrate it. Councils with good staffing numbers and skills will have an advantage over councils without these elements. Knowledge and initiative of staff within a council may influence a particular style of management and planning approach. Funding available (such as a region's rating base) can influence the amount of money, staff and resources available to be used in this area of soil conservation. The level of priority given to soil conservation may also be influenced by political factors and reflect the perceptions and agendas of regional councillors or the dominance of rural land users within a region.

Variation in the priority given to soil conservation was detected in the different institutional settings of a unitary authority to that of a regional council. Interviewees from Gisborne District Council reasoned that the low priority given to soil conservation in their region was because the council's functions had to span a much wider range of issues and responsibilities. A planner considered that infrastructure (such as roading, sewage and water supply) were the main priority and were allocated greater resourcing, leaving land management hindered by lack of resources.

Regional councils have to choose the priority and commitment they make to soil conservation and provide the rationale and process for undertaking it. Whatever the priority or level of commitment (such as budgetary, staffing and resource provision), it needs to be linked with mechanisms that monitor performance of policies - such as those found in annual plans. This requires councils to document the process and rationale, providing regionally applicable and acceptable objectives and methods. Through documenting the processes and rational, public input and scrutiny will help reduce political biases influencing the level of priority. These requirements also enable councils to judge at the end of a set time period, whether their level of 'commitment' was sufficient to achieve their set objectives and to re-evaluate and change their priority given to soil conservation if necessary.

In conclusion this chapter has discussed the impact the Resource Management Act has had on the planning and practice of soil conservation. The discussion has highlighted through the results of the plan coding and the case study interviews, the current

approach and status of soil conservation, and the various implications. These implications are summarised in the next and concluding chapter.

Chapter Seven

IMPLICATIONS FOR SOIL CONSERVATION PLANNING AND PRACTICE

This chapter draws together the findings of the research, where conclusions can be made about the changes the Resource Management Act has brought to soil conservation and the consequent state and direction of current soil conservation approaches. Observations have been made where potential exists for councils to improve their current soil conservation regimes. This section concludes with reflections on the research design and its limitations.

Research Aim and Objectives

The aim of the research was to determine how and to what extent soil conservation is changing under the Resource Management Act. This aim has been investigated through the four research objectives that have explored the issues of who is involved in the policy and implementation of soil conservation, types of approaches being taken, links between practice and outcomes and the extent to which soil conservation is integrated into sustainable land management. The findings of the research have shown that considerable changes have occurred under the new management regime introduced with the Resource Management Act and the restructuring of government agencies responsible for resource management.

The primary objective of sustainable management under the Resource Management Act has seen soil conservation included as an approach to the broader and more holistic objective of achieving sustainable land management. The emphasis placed by the Act on integrated management has also contributed to councils broadening the previously narrow objectives of soil conservation. The case study councils are seen to be struggling with the complexities involved in integrating natural resources, as they are required to undertake a more comprehensive and holistic approach to land management. In doing so, councils need to determine a regional definition of sustainable land management, so that

appropriate objectives, policies and methods can be formulated for the management of regional resources.

The Resource Management Act provides a comprehensive framework of processes (such as plan preparation, assessment of effects, consultation and plan and policy reviews), to enhance land management planning. Improved soil conservation outcomes require councils to be committed to fully undertaking these processes. This often requires an improvement in staff skills and innovation to initiate approaches that are tailored to regional land management issues. Political and institutional support and the availability of funds and resources also influences a council's ability to formulate and implement effective soil conservation programmes.

The scope for flexibility within policies and plans has allowed diverse and numerous approaches and techniques to be taken throughout New Zealand for soil conservation. There are a number of reasons for these disparities, including physical and institutional differences, political influences and different community aspirations. Some councils have embraced this flexibility and taken the opportunity to apply new and innovative approaches to their regional land issues. Other councils appear to have made only incremental changes, inhibited by regional circumstances.

A common element of all councils' approaches is the move from regulatory to participative approaches. A participative style of management encourages approaches to land management through building understanding, commitment, knowledge and skills within communities, so they can effectively participate in the long term processes of land management. A number of facets assist in the development and success of participative approaches. This style of approach is more successful when developed within existing groups or cohesive communities that share similar problems. However, where cost sharing is necessary for the success of some participative programmes, there needs to be careful monitoring of the programmes' outcomes. Codes of practice are found to be a

useful participatory approach that is increasingly being used by councils, and have the potential to be linked to industry standards.

A combination of participative and regulatory approaches is recommended, where initial approaches encourage and include land users in management decisions and implementation through the provision of information, advice and resources. Regulatory approaches should be used as a legally defensible bottom line should non-regulatory approaches fail.

The move towards a participative style of management promotes the notion of shared ownership of land problems as well as solutions. The research shows that little statutory obligation is placed on regional communities to take on this ownership and that councils still largely 'own' soil conservation. For land users to begin to 'own' their problems, it requires councils to devolve resources and responsibilities to communities. The community must also take the initiative and responsibility to approach their council when they require assistance or resources for land management.

Regional differences in the availability of funding and resources affect a council's ability to apply effective soil conservation practices. Regions with limited rating bases are unlikely to be assisted by central government. As a result, councils need to take initiative and find solutions from within their regions for improving land management. Council investment into production forestry, serving the dual purpose of conserving soil as well as generating revenue at harvesting time, may be worthy of further investigation.

The regional diversities in approaches and commitment to land management have national consequences. For example, lower environmental conditions in one region may attract industry and increase the potential for environmental degradation. With no co-ordinating body overseeing the quality and success of approaches taken, there is potential for regional diversities to accelerate. It is considered that the Ministry for the Environment has an important role to play to ensure that regional diversities do not impede upon the long-term quality of land. It would be beneficial for the Ministry for the Environment to

provide co-ordination and direction for regional monitoring programmes, formulating a common set of objectives that can be applied to each region. The facilitation of information gathering and dissemination is another function the Ministry for the Environment is well positioned to provide.

The research shows that regional monitoring needs much improvement before conclusions can be drawn about the current state of the land resource and the consequent success or effect specific land management approaches are having. With an improved and comprehensive assessment, the quality of land can then be determined. In obtaining this, regional and central government need to work together and assess what is currently being monitored, where gaps are and the best ways to achieve information gathering for monitoring on a national scale.

Research findings indicate few statutory provisions for links between soil conservation policies and their outcomes exist. In keeping with the participative style of management, accountability often relies on goodwill and informal obligations. This reinforces the need for monitoring regional objectives to assess the compliance and success of this approach.

The commitment of councils in improving land quality reflects their capacity to demonstrate it. This, in turn, is dependent on regional characteristics such as staff skills and leadership, funding, resources and political and community influences. The importance of assessing the performance and outcomes of policies is also linked to the requirement for monitoring provisions. These provisions enable a council to judge at the end of a set time period whether the level of commitment and priority given to soil conservation was sufficient to achieve set objectives.

Organisational integration is also an important focus of the Resource Management Act. Results show that councils are generally planning in isolation and often unnecessarily duplicating processes. To achieve regionally and nationally comprehensive approaches, councils need to initiate their own co-ordination and liaison with other councils in their

regions. A forum of relevant council members may be an appropriate method of obtaining greater regional co-ordination and information exchange for managing land.

The Resource Management Act has set in place the framework for sustainable land management. However, the onus is on individual councils to interpret sustainable land management and find regionally appropriate ways to achieve it. For most councils, past soil conservation programmes have set a precedence for the continuation of soil conservation. Although sustainable land management is now the focus, soil conservation continues to play a role as an approach in achieving this objective. The research shows that councils are currently being challenged by the Act to formulate regionally applicable ways for managing land. Potential lies in combining regulatory and participative approaches to achieve greater effectiveness and efficiency that has previously eluded soil conservation programmes.

While the flexibility of the Act allows councils to tailor approaches to their regional circumstances, it is evident that some councils are better equipped to achieve sustainable land management objectives. Consequently disparities in regional land quality have arisen. Because of the relative newness of the Act, it is possible these problems are only short term. However, the issues highlighted in this study underscore the need to make best use of the new management regime, to prevent the potential for the land resource to irreversible degrade.

Reflections on the Research Design

The research methods used in this research were both quantitative and qualitative. The advantages of this approach was that the analyses of the regional policy statement and plans were complemented by the informed judgements of the interviews.

There are of course, limitations in any research design relating to time, geographical distance, costs of undertaking research and appropriateness of methods. For example, despite efforts to provide a rigorous plan coding schedule and scoring definitions, some of

the issues and questions investigated in the plan coding were not always easy to assess. The different manner in which various councils have addressed issues within their policy statements and plans also made it difficult to apply a uniform set of questions and coding definitions.

Although regional plans of a similar status were coded, there were still biases. For example, although the Gisborne District Council's Vegetation and Earth Removal Regional Plan is written under Resource Management Act requirements, this plan is to be replaced with a plan that follows more to the style and approach of other regional land management plans. Gisborne District Council is in the process of developing and changing approaches to soil conservation and land management that are more aligned with the Resource Management Act's philosophy and requirements.

It is unfortunate that only seven regional plans were at a stage that allowed them to be coded. As more councils have indicated their intentions to produce regional plans for land management, more comprehensive results and trends may have been gained with their inclusion into the study.

Using only three case study councils may be considered to be an insufficient number on which to base trends. The case study councils do, however, allow specific examples to be highlighted and compared to the results obtained from the plan coding. However, specific conclusions drawn from the case studies cannot be generalised beyond the regions investigated, nonetheless the information obtained can be placed alongside other data to address the research questions.

Finally, although the Resource Management Act has been in place for five years, it is still relatively early to attempt to assess how councils are approaching and achieving soil conservation and land management under this regime. Previous and current efforts of regional and unitary councils have been occupied with producing mandatory regional policy statements. Attention is now being focused on the regional issues identified in areas

of land management. This study has provided insights from analyses of plans and case studies to show that soil conservation practices are indeed changing under a new resource management regime. Councils are adopting a mix of regulatory and non-regulatory approaches to soil conservation. More attention is being placed on justification and implementation of measures for soil conservation. The new mandate for councils is clearly influencing approaches towards soil conservation, although much still depends on the willingness and commitment of politicians, council staff and communities towards managing the land resource in a sustainable way.

APPENDIX ONE

PLAN CODING CRITERIA FOR REGIONAL LAND MANAGEMENT / SOIL CONSERVATION PLANS AND REGIONAL POLICY STATEMENTS

General details of the Plan/Policy Statement

1. Title of the plan/RPS
2. Status of the plan/RPS
3. Spatial coverage of the plan/RPS
4. Function of the plan/RPS
5. Duration of the plan/RPS

Objective 1 ***To identify soil conservation approaches being used by regional councils.***

1.1 Regulatory techniques for obtaining the plan's objectives.

Rules are a specific requirement to which a person or persons using or developing a resource must conform to.

a) Does the plan include **rules** for soil conservation?

✔ - yes

x - no

b) Does the plan include **emergency action provisions** such as Abatement notices or enforcement orders for soil conservation?

✔ - yes

x - no

1.2 Co-operative or flexible techniques used for obtaining the plan's objectives.

Information can be targeted at specific user groups or the wider community using techniques such as demonstration sites, field days, talks and community awareness programmes. **Advocacy** involves active targeting of key stakeholders or other agencies to facilitate information exchange, or promotion or support of specific actions.

c) Does the plan include **information provision, education and advocacy** for soil conservation?

✔ - yes

x - no

People working together by sharing information and ideas are considered more likely to develop and implement effective land management methods than an individual tackling an issue on their own. **Community groups** encourage local solutions to local issues.

d) Does the plan include provisions for **community groups** such as Landcare for soil conservation?

✔ - yes

x - no

Codes of Practice are agreements that provide guidance on management practices that prevent or minimise adverse environmental effects. Codes of practice may be prepared with specific groups and have the potential to be linked to industry standards.

e) Does the plan include **codes of practice** or **guidelines** for soil conservation?

✔ - yes

x - no

Co-ordinated programmes are used to co-ordinate the actions of a group, such as landholders, to manage issues that affect more than one property. The regional council acts as a programme co-ordinator and may supply information, expertise, facilities etc.

f) Does the plan include **co-ordinated programmes** for soil conservation?

✔ - yes x - no

Making environmental goals part of an economic decision provides an incentive for good environmental management. **Economic incentives** include subsidies, grants, relief from consent charges, rates rebates etc. They may also include disincentives, for example, fines, financial contributions on consents, user charges, taxes, bonds.

g) Does the plan include **economic incentives** for soil conservation?

✔ - yes

x - no

Service delivery can provide a way of implementing policy cost-effectively in situations where the market cannot. Service delivery may be provided by the council or contracted out.

h) Does the plan include **service delivery** for soil conservation?

✔- yes

x - no

Baseline **information** is required for **monitoring** cumulative effects and trends in the 'state of the environment'.

i) Does the plan include environmental investigation and monitoring for soil conservation?

✔ - yes

x - no

The regional council may help draw up a soil conservation plan for an individual farm and supply information and other resources (such as trees) for implementing it.

j) Does the plan include **farm** or **property plans** for soil conservation?

✔ - yes

x - no

k) Does the regional policy statement indicate the intention to write a **regional soil conservation / land management plan?**

✔ - yes

x - no

l) List any **other methods** that are used by the regional councils to implement soil conservation as outlined in the plan.

Objective 2 ***To identify who is involved in developing policy and implementing soil conservation practices.***

This objective and the corresponding research questions are more suited to be answered by the council staff when interviewed. However, some indication of the functions may be given in the plans and policy statements.

Coding Definition: **2 - Fully described = Must include the RMA's provisions plus objectives, policies and methods of what the council will do or expectations of roles of others in relation to the management of land for soil conservation.**

1 - Mentioned = RMA outline or in relation to natural resources in general.

0 - Not mentioned at all

2.1 The Ministry for the Environment has the legislative responsibility for directives for soil conservation at the central government level, as well as the overseeing and monitoring of the functions of the Act. Although no guidelines such as a national policy statement or environmental standards are currently available for soil conservation, are regional councils placing expectations on central government for guidance? Central government may also include MAF and Crown Research Institutes such as Landcare.

a) Is central government's function described in the **plan/RPS** ?

2 - fully described

1 -mentioned

0 - not mentioned at all

2.2 Section 30 provides the main mandate for regional councils soil conservation function. The RMA provides directives for regional councils in implementing the functions, but also guidance to the public in what can be expected from regional councils. Is the functions of the regional councils conveyed to the public through the plan?

b) Does the **plan/RPS** outline what the regional council will do in terms of soil conservation policy?

2 - fully described

1 -mentioned

0 - not mentioned at all

c) Does the **plan** outline how the regional council will implements its soil conservation obligations?

2 - fully described

1 -mentioned

0 - not mentioned at all

d) Does the **plan/RPS** outline soil conservation functions and expectations placed on local business or community groups?

2 - fully described

1 -mentioned

0 - not mentioned at all

e) Does the **plan/RPS** outline soil conservation functions and expectations placed upon territorial authorities?

2 - fully described

1 -mentioned

0 - not mentioned at all

f) Does the **plan/RPS** outline a soil conservation function given to Maori?

2 - fully described

1 -mentioned

0 - not mentioned at all

Objective 3 To identify accountability links between regional councils and the communities involved in soil conservation programmes

This objective aims to determine the importance allocated to soil conservation by a regional council. The statutory and informal obligations operate two ways - providing an outline as to what the community can expect their regional council to do or provide and vice versa. The links between councils policies and practices and the outcomes will be outlined in regional plans.

Coding Definition: **2 - Fully described = Must include the RMA's provisions plus objectives, policies and methods of what the council will do or expectations of roles in their region in relation to management of soil conservation.**
1 - Mentioned = RMA outline or in relation to natural resources.
0 - Not mentioned at all.

a) Does the **plan** allow for public ownership of soil conservation problems/issues?

2 - fully described
1 -mentioned
0 - not mentioned at all

In determining mechanisms provided in the plan that allow for long term planning and accountability of the benefactors of soil conservation programmes a different scoring definition is used;

Coding Definition **2 - explicitly = details mechanisms for going beyond the current life of the plan.**
1 - implicitly = mentions a long term view but has no mechanisms for doing so.
0 - not mentioned at all.

b) Does the **plan** provide for the long-term scope of soil conservation programmes?

2 - explicit 1 - implicit
0 - not mentioned at all

Objective 4 ***To assess the extent to which soil conservation is integrated with sustainable land management.***

The RMA sets provisions for integrated management. This requires two types of integration, firstly the integration of management of different resources so that the effects on other resources resulting from the management of a particular resource are taken into account. For example; including the effects of soil management on both water and vegetation. The second type of integration is of the land management roles and responsibilities of different organisation, especially where there are overlapping jurisdictions, for example, between regional councils and district councils.

Coding Definition: **2 - Fully described = Must include the RMA's provisions and definition, plus the council's own definition in relation to management of soil conservation in their own region.**
1 - Mentioned = RMA outline only
0 - Not mentioned at all

a) Does the **plan/RPS** refer to sustainable land management?

2 - fully described
1 -mentioned
0 - not mentioned at all

Coding Definition: **2 - explicitly = actual policies and methods are acknowledged and incorporated into plan.**
1 - implicitly = territorial authorities are mentioned in general with reference to managing soil conservation or natural resources in general.
0 - not mentioned at all.

b) Is soil conservation dealt with as a specific issue or is integrated with other resource management issues such as water in the **plan/RPS**?

2 - fully described
1 -mentioned 0 - not mentioned at all

Cross boundary Issues

Regional councils must contain a statement of the processes used to deal with issues which cross local authority boundaries and territorial boundaries and regions (S67(1) (h)). The purpose of this provision is to achieve integrated management. (The requirement of the RMA is to state processes - for example, courses of action, not objectives, policies or methods).

Coding Definition: **2 - explicitly = details courses of action in relation to regional resources**

1 - implicitly = courses of action stated only

0 - not mentioned at all

c) Does the **plan/RPS** deal with cross boundary issues for soil conservation?

2 - explicitly

1 - implicitly

0 - not mentioned at all

d) Are territorial authorities' implementation methods acknowledged and incorporated into the **plan/RPS**?

2 - explicitly

1 -implicitly

0 - not mentioned at all

Soil conservation has an extensive statutory history which has contributed to current legislative requirements for land management, for example Section 34 notices. Have such mechanism been incorporated into current management regimes?

Coding Definition: **2 - fully described = explains why or why not previous mechanism are used**

1 - mentioned = includes previous mechanisms but no discussion as to why

0 - not mentioned at all

e) Does the **plan** outlines previous soil conservation programmes?

2 - fully described

1 -mentioned 0 - not mentioned at all

f) Have previous soil conservation mechanisms been amalgamated into RMA legislative requirements in the **plan**?

2 - fully described

1 -mentioned

0 - not mentioned at all

APPENDIX TWO

MATRIX FOR CODING REGIONAL POLICY STATEMENTS

Objective 1. Soil Conservation Approaches

Techniques for Soil Conservation Implementation

Regional Councils	Regulation	Emergency Actions	Info/educate/advoc	Community Groups	Codes of Practice / Guidelines	Coordinated Progs.	Econ. Instruments	Service Delivery	Investigations / Monitoring	Regional Soil Cons. plan	Other
Northland	✔	✔	✔	✔	✔	✔		✔	✔	✔	
Auckland	✔	✔	✔	✔			✔	✔	✔	✔	✔
Waikato	✔	✔	✔			✔					
BoP	✔	✔	✔					✔		✔	✔
Gisborne	✔	✔	✔				✔		✔	✔	
Taranaki	✔	✔	✔		✔				✔	✔	✔
Hawkes Bay	✔	✔	✔	✔	✔						✔
Manawatu-Wang.	✔	✔	✔			✔	✔			✔	✔
Wellington	✔	✔	✔		✔				✔	✔	✔
Marlborough	✔	✔	✔		✔				✔	✔	
Nelson	✔	✔	✔		✔				✔	✔	
Tasman	✔	✔	✔	✔			✔		✔		
Canterbury	✔	✔	✔	✔	✔				✔	✔	✔
West Coast	✔	✔			✔	✔	✔				
Otago	✔	✔	✔	✔	✔				✔		
Southland	✔	✔	✔	✔	✔			✔	✔	✔	✔

MATRIX FOR CODING REGIONAL POLICY STATEMENTS

Objective 2. Functions of those involved in Soil Conservation

	Functions				
Regional Councils	a)Central Governmer	b)council policy	d) Business / community groups	e) Territorial Auth.	f) Tangata Whenua
Northland	0	2	0	1	0
Auckland	0	2	0	2	0
Waikato	0	2	1	0	1
BoP	0	2	1	2	0
Gisborne	2	2	2	0	1
Taranaki	0	2	0	2	1
Hawkes Bay	0	2	1	0	1
Manawatu-Wang.	0	2	0	1	1
Wellington	0	2	1	1	1
Marlborough	0	2	0	0	1
Nelson	0	2	0	0	0
Tasman	0	2	0	0	1
Canterbury	1	2	1	1	1
Westcoast	0	1	0	0	0
Otago	1	1	0	2	0
Southland	1	1	0	2	0

MATRIX FOR CODING REGIONAL POLICY STATEMENTS

Objective 4. Integration of Soil Conservation

Factors of Integration

Regional Councils	a) Sustainable land management	b) Soil cons. integrated with resources	c) Cross boundary issues	d) TA's acknowledged
Northland	2	1	2	2
Auckland	1	1	2	2
Waikato	1	1	1	1
BoP	2	2	2	2
Gisborne	1	1	1	1
Taranaki	2	1	1	1
Hawkes Bay	1	2	1	1
Manawatu-Wang.	1	1	1	1
Wellington	0	2	1	1
Marlborough	1	1	1	0
Nelson	1	0	1	2
Tasman	1	1	2	2
Canterbury	2	2	1	1
Westcoast	0	0	0	0
Otago	0	0	1	1
Southland	2	2	2	2

APPENDIX THREE

MATRIX FOR CODING REGIONAL PLANS

Objective 1. Soil Conservation Approaches

Techniques for Soil Conservation Implementation

Regional Councils	Rules	Emergency Actions	Info/educate/advoc	Community Groups	Codes of Practice / Guidelines	Coordinated Progs.	Econ. Instruments	Service Delivery	Investigations / Monitoring	Farm Plans	Other
Northland	✔	✔	✔		✔	✔	✔			✔	✔
Auckland	✔	✔			✔			✔	✔		✔
BoP	✔	✔				✔		✔	✔	✔	✔
Gisborne	✔	✔						✔	✔		
Manawatu-Wang.	✔	✔	✔	✔	✔		✔		✔		✔
Marlborough	✔				✔						✔
Marlb. Sounds	✔	✔	✔								✔

MATRIX FOR CODING REGIONAL PLANS

Objective 2. Functions of those Involved in Soil Conservation

Functions

Regional Councils	a)Central Government	b)Regional Council policy	implemetation	d) Business / community groups	e) District Councils	f) Tangata Whenua
Northland	0	2	2	1	0	1
Auckland	0	2	2	1	2	1
BoP	1	2	2	1	2	1
Gisborne	1	1	2	1	0	0
Manawatu-Wang.	1	2	2	1	1	1
Marlborough	0	0	1	0	1	0
Marlb. Sounds	0	2	2	1	0	0

MATRIX FOR CODING REGIONAL PLANS

Objective 3. Identifying Links Between Practice and Outcomes

	Links	
Regional Councils	a) Public ownership	b) long term scope
Northland	0	0
Auckland	1	1
BoP	2	2
Gisborne	0	1
Manawatu-Wang.	0	1
Marlborough	0	0
Marlb. Sounds	1	0

MATRIX FOR CODING REGIONAL PLANS

Objective 4. Integration of Soil Conservation

Factors of Integration

Regional Councils	a) Sustainable land management	b) Soil cons. integrated with resources	c) cross boundary issues	d) TA's acknowledged	e) Previous programmes	f) Previous mechanisms
Northland	0	2	1	0	0	0
Auckland	0	2	1	1	1	1
BoP	1	1	2	2	2	2
Gisborne	1	0	1	1	1	2
Manawatu-Wang.	1	2	2	0	1	1
Marlborough	0	0	0	1	1	0
Marlb. Sounds	1	1	1	1	0	0

APPENDIX FOUR

CONFIRMATION LETTER

Marilyn Regnault
7 Purnell Court
Palmerston North
Ph 06) 353 6663

15 April 1996

Interviewee
Address 1
Address 2

RE: Interview

Dear

I would like to confirm our interview date on the of April at . I have enclosed the questions I would like to discuss. I estimate the interview will take approximately 45 minutes and I would like to tape the interview to reduce the time required. The information obtained will be kept confidential and the tape later destroyed.

Thank you for your time. I look forward to our meeting.

Yours sincerely

Marilyn Regnault

APPENDIX FIVE

Interview Questions for Regional Council Staff and Regional Councillors

1. Approaches and Techniques Used for Soil Conservation

The following questions aim to determine the types of approaches and techniques regional councils are taking for soil conservation and the rationale behind the selection of approaches.

1. Why does your council undertake soil conservation?

2. What priority does your council give soil conservation?

3. What has determined this priority?

4. What techniques does your council use for implementation for soil conservation programmes?

5. What is the primary technique(s) used for soil conservation? Why?

6. Is soil conservation policy integrated with other resource management issues such as water?

7. What are the benefits / disadvantages of policy integration?

2. Impact of Resource Management Act on Soil Conservation

The next set of questions explore the impact the Resource Management Act (1991) has had on soil conservation. This is to evaluate whether the mandate issued under the RMA has had an effect on soil conservation policy formulation and practice.

Under the RMA regime, planning has theoretically moved from being prescriptive and coercive to co-operative and more flexible.

8. Do you think this had occurred in soil conservation ? Give reasons for your opinion?

9. Are the objectives and goals under RMA legislation different from prior objectives and goals for soil conservation?

10. Do you feel better equipped under the RMA regime to target and achieve soil conservation than under the previous regime?

3. Roles of those Involved in Soil Conservation

Section Three's questions inquires into the roles of those involved in soil conservation. The questions are aimed at finding out the functions played by various agencies and whether these functions are considered to be sufficient for achieving the desired soil conservation approach.

11. What role does the council see for itself in the management of soil conservation?

12. Does central government, for example Ministry for the Environment and Ministry of Agriculture and Fisheries, have any input (direct and indirect) into soil conservation at the regional level?

13. Would you like to see central government having greater input into soil conservation at the regional level?

14. What other agencies and groups have policies or input into soil conservation in your region?

15. Has your council attempted to take these groups and their contributions into account?

4. Accountability Links

This section questions the long term scope of the council's approaches. Under the RMA councils are required to consider the needs of future generations. This requires councils to make provisions (within the plans and otherwise) to ensure current efforts are not short term. Consequently various elements of accountability are required to ensure this.

16. Does the community support the council's soil conservation programme?

17. How do you know this?

18. What mechanisms do you have to ensure soil conservation works are effective in the short and long term?

19. How enforceable are these mechanisms?

20. Does your annual / strategic plan contain measures for soil conservation?

Do you have anything else you wish to add or discuss in this interview?

APPENDIX SIX

Interview Questions for Community Representatives

1. Approaches and Techniques Used for Soil Conservation

The following questions aim to determine the types of approaches and techniques regional councils are taking for soil conservation and the rationale behind the selection of approaches.

1. Why does your regional council undertake soil conservation?

2. What priority does your council give soil conservation?

3. What has determined this priority?

4. What techniques does your council use for implementation for soil conservation programmes?

5. What is the primary technique(s) used for soil conservation? Why?

6. Is soil conservation policy integrated with other resource management issues such as water?

7. What are the benefits / disadvantages of policy integration?

2. Impact of Resource Management Act on Soil Conservation

The next set of questions explore the impact the Resource Management Act (1991) has had on soil conservation. This is to evaluate whether the RMA has had an effect on soil conservation policy formulation and practice.

Under the RMA regime, planning has theoretically moved from being prescriptive and coercive to co-operative and more flexible.

8. Do you think this has occurred in soil conservation ? Give reasons for your opinion?

9. Are the objectives and goals under RMA legislation different from prior objectives and goals for soil conservation?

10. Do you think councils are better equipped under the RMA regime to target and achieve soil conservation than under the previous regime?

3. Roles of those Involved in Soil Conservation

Section Three's questions inquires into the roles of those involved in soil conservation. The questions are aimed at finding out the functions played by various agencies and whether these functions are considered to be sufficient for achieving the desired soil conservation approach.

11. What role does the council see for itself in the management of soil conservation?

12. Does central government, for example Ministry for the Environment and Ministry for Agriculture and Fisheries have any input (direct and indirect) into soil conservation at the regional level?

13. Would you like to see central government having greater input into soil conservation at the regional level?

14. Do you support the council's soil conservation programme, including the techniques used?

15. Has your council attempted to take your group and its contributions into account?

16. Should any other agencies be involved (for example, district councils)?

17. What support / encouragement has your group received from the regional council to become involved at a policy and or operational level?

18. What resources (funding, technical assistance) are available to support your group's participation?

Do you have anything else you wish to add or discuss in this interview?

APPENDIX SEVEN

Interview Questions for Central Government

1. Roles of those Involved in Soil Conservation

Section One's questions inquires into the roles of those involved in soil conservation. The questions are aimed at finding out the roles played by various agencies and whether these roles are considered to be sufficient for achieving the set soil conservation mandate.

1. Does your organisation have any input into regional councils' soil conservation policies and practice?

2. What role do you see central government having for soil conservation?

3. Do you see the need for integration between regional councils soil conservation programmes and the proposed National Sustainable Land Management Strategy?

   If yes, how will this be achieved?
   If no, how effective will a stand alone strategy be?

4. Are regional councils integrating soil conservation with other resource management issues such as water?

5. What are the benefits / disadvantages of integration?

2. Impact of Resource Management Act on Soil Conservation

The next set of questions explore the impact the Resource Management Act (1991) has had on soil conservation. This is to evaluate whether the RMA has had an effect on soil conservation policy formulation and practice.

Under the RMA regime, planning has theoretically moved from being prescriptive and coercive to co-operative and more flexible.

6. Do you think this had occurred in soil conservation ? Give reasons for your opinion?

7. Are the objectives and goals under RMA legislation different from prior objectives and goals for soil conservation?

8. Are we better equipped under the RMA regime to target and achieve soil conservation than under the previous regime?

3. Accountability Links

This section questions the long term scope of soil conservation approaches. Under the RMA, councils are required to consider the needs of future generations. This requires councils to make provisions (within the plans and otherwise) to ensure current efforts are not short term. Consequently various elements of accountability are required to ensure this.

9. What mechanisms do you have to ensure soil conservation policies are effective in the short and long term?

10. How enforceable are these policies and mechanisms?

Do you have any thing else you wish to add or discuss in this interview?

APPENDIX EIGHT

EXTRACTS USED FROM THE RESOURCE MANAGEMENT ACT, 1991.

17. Duty to avoid, remedy, or mitigate adverse effects -(1) Every person has a duty to avoid, remedy, or mitigate effects on the environment arising from an activity carried on by or on behalf of that person, whether or not the activity is in accordance with a rule in a plan, a resource consent, section 10 (certain existing uses protected), or section 20 (certain existing lawful activities allowed).

(2) The duty referred to in subsection (1) is not itself enforceable against any person, and no person is liable to any other person for a breach of that duty.

24. Functions of Minister for the Environment- The Minister for the Environment shall have the following functions under this Act:

(f) The monitoring of the effects and implementation of this Act (including any regulations in force under it), national policy statements, and water conservation orders:

(g) The monitoring of the relationship between the functions, powers, and duties of central government and local government under this Part, and the functions, powers, and duties of the Hazards Control Commission under Part XIII:

30. Functions of regional councils under this Act-(1) Every regional council shall have the following functions for the purpose of giving effect to this Act in its region:

(a) The establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the natural and physical resources of the region:

(b) The preparation of objectives and polices in relation to any actual or potential effects of the use, development, or protection of land which are of regional significance:

(c) The control of the use of land for the purpose of-

(i) Soil Conservation:

32. Duties to consider alternatives, assess benefits and cost, etc.- (1) In achieving the purpose of this Act, before adopting any objective, policy, rule, or method in relation to any function described in subsection (2), any person described in that subsection shall-

(a) Have regard to-

(i) The extent (if any) to which any such objective, policy, rule, or method is necessary in achieving the purpose of this Act; and

(ii) Other means in addition to or in place of such objective, policy, rule, or other method which, under this Act or any other enactment, may be used in achieving the purpose of this Act, including the provision of information, services, or incentives and the levying of charges (including rates); and

(iii) The reasons for and against adopting the proposed objective, policy, rule, or other method and the principal alternative means available, or of taking no action where this Act does not require otherwise; and

(b) Carry out an evaluation, which that person is satisfied is appropriate to the circumstances, of the likely benefits and costs of the principal alternative means including, in the case of any rule or other method, the extent to which it is likely implementation and compliance costs; and

(c) Be satisfied that nay such objective, policy, rule, or other method (or any combination thereof)-

(i) Is necessary in achieving the purpose of this Act; and

(ii) Is the most appropriate means of exercising the function, having regard to its efficiency and effectiveness relative to other means.

(2) Subsection (1) applies to-

(a) The Minister, in relation to-

(i) The recommendation of the issue, change, or revocation of any national policy statement under section 52 and 53:

(ii) The recommendation of the making of any regulations under section 42:

(c) Every local authority, in relation to the setting of objectives, policies, and rules under Part V.

(3) No person shall challenge any objective, policy, or rule in any plan or proposed plan on the grounds that subsection (1) has not been complied with, except-

(a) In a submission made under clause 6 of the First Schedule in respect of a proposed plan or change to a plan; or

(b) In an application or request to change a plan made under section 64(4) or section 65(4) or section 73(2) or clause 23 of the First Schedule.

35. Duty to gather information, monitor and keep records-(1) Every local authority shall gather such information, and undertake or commission such research, as is necessary to carry out effectively its functions under this Act.

(2) Every local authority shall monitor-

(a) The state of the whole or any part of the environment of its region or district to the extent that is appropriate to enable the local authority to effectively carry out its functions under this Act; and

(b) The suitability and effectiveness of any policy statement or plan for its region or district; and

(c) The exercise of any functions, powers, or duties delegated or transferred by it; and

(d) The exercise of the resource consents that have effect in its region or district, as the case may be,-

and take appropriate action (having regard to the methods available to it under this Act) where this is shown to be necessary.

(3) Every local authority shall keep reasonably available at its principal office, information which is relevant to the administration of policy statements and plans, the monitoring of resource consents, and current issues relating to the environment of the area, to enable the public-

(a) To be better informed of their duties and of the functions, powers, and duties of the local authority; and

(b) To participate effectively under this Act.

(4) Every local authority shall keep reasonable available at each of the offices in its region or district such of the information referred to in subsection (3) as related to that part of the region or district.

(5) The information to be kept by a local authority under subsection (3) shall include-

(a) Copies of its operative and any proposed policy statements and plans including all requirements for designations and heritage orders, and all operative and proposed changes to those policy statements and plans; and

(b) All its decisions relating to submissions on any proposed policy statements and plans which have not yet become operative; and

(c) In the case of a territorial authority, copies of every operative and proposed district plan for the region of which its district forms part; and

(d) In the case of a regional council, copies of every operative and proposed district plan for every territorial authority in its region; and

(e) In the case of a regional council, a copy of every Order in Council served in it under section 154(a); and

(f) Copies of any national policy statement or New Zealand coastal policy statement; and

(g) Records of each resource consent granted by it, including any transfer of a resource consent; and

(h) records of all extensions of time periods and waivers granted by it under section 37 in relation to applications under section 10 (which relates to lapsing of consents), an section 184 (which related to lapsing of designations) during the preceding 5 years; and

(i) A summary of all written complaints received by it during the preceding 5 years concerning alleged breaches of the Act or a plan, and information on how it dealt with each such complaint; and

(j) Records of natural hazards to the extent that the local authority considers appropriate for the effective discharge of its functions; and

(k) Any other information gathered under subsections (1) and (2).

67. Contents of regional plans -(1) A regional plan may make provision for such of the matters set out in Part I of the Second Schedule as are appropriate to the circumstances of the region, and shall state-

(h) The processes to be used to deal with issues which cross local authority boundaries and between regions; and

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