

REGIONAL AND HORTICULTURAL DEVELOPMENT PLANNING
IN CANTERBURY : A REVIEW

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ABSTRACT

The horticultural sector in the Canterbury region appears to be moving, from a period of slow growth when it was oriented largely to domestic markets, to a period of accelerated growth associated with the development of export fruit crops.

Horticulture is a labour intensive industry and, with high levels of unemployment being experienced in Canterbury, development of export horticulture is perceived as a desirable component of a Canterbury regional development strategy.

This study examines development issues and concepts, and formulates an interim approach to development planning for the Canterbury horticultural sector. The suggested approach is an informal regional sectoral coalition of the public and private elements of the horticultural sector in Canterbury. This coalition would supervise the formulation of an adaptive strategy for dealing with common problems.

The United Council does not have the resources to prepare detailed studies of all development options. Therefore, by taking part in such a development planning coalition as a short-term task oriented exercise, the United Council would then be in a better position to formulate an effective regional approach to horticultural development in Canterbury.

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1. INTRODUCTION

1.1 The Problem

This study links two issues. The first of these is, how can planning assist the horticultural sector in Canterbury to achieve a greater measure of its development potential? Most public sector horticultural development planning is reactive, concerned with servicing well advanced private sector development initiatives. In the present economic climate there is a search within government for a more 'proactive' approach to government regional development planning, which seeks to stimulate new initiatives by the private sector where identified opportunities exist.

Because of its place out of the mainstream of the recent New Zealand horticultural investment 'fever' and its recognised horticultural potential, Canterbury is a good place to test such an approach.

High levels of unemployment and low rates of growth in the regional economy are matters which concern many in the Canterbury community. Regional resource development, including further development of horticulture, is considered an important part of the region's response to that problem. The rapid diversification and intensification of New Zealand's agricultural sector, through the development of horticulture, has been a phenomenon of the past decade. Canterbury is a well established supplier of many horticultural commodities to the South Island, but its share of some domestic markets has declined over recent years. The Canterbury horticultural sector has been slow to respond to the increasing emphasis within New Zealand on export horticulture. Although Canterbury does produce a narrow range of products for export markets, it has been displaced in some markets in recent years by North Island competition (eg, strawberries).

Submissions to the united council, and studies prepared on its behalf, cite horticulture as a growth prospect in the region. However, the development of Canterbury export horticulture in a competitive market environment is likely to require initiative and a strategic and cooperative approach to corporate planning by the horticultural industries of the region. It will require the development of products with export potential which Canterbury is well suited to produce in competition with other regions.

From a regional point of view rather than a purely sectoral one, success of such a resource development programme will be gauged by the manner in which this development furthers the aspirations and raises the quality of life for the people of Canterbury as a whole, especially those, such as the youth unemployed, who are in particular need. Horticulture's contribution to the development of regional commerce and infrastructure may also be important. This brings up the second issue to be considered in this study. In search of development strategies which achieve more satisfactory outcomes in terms of human welfare, many resource planners are calling for the wide application of an 'anticipatory' (Hayward and Piddington, 1982) or 'adaptive' (Holling, 1982) approach to resource development planning and environmental planning. This is stated simply by Hayward and Piddington (1982).

"We believe that by framing development within environmental constraints and by bringing environmental issues forward in to the early planning stages, we achieve long run efficiencies of resource use."

Holling (1982) has a similar case to put:

"Environmental concerns are now often dealt with in a fixed review of an independently designed policy. We

argue that this reactive approach will inhibit laudable economic enterprises as well as violate critical environmental constraints. We offer, as an alternative, the process of adaptive environmental management and policy design, which integrates environmental and social understanding at the beginning of the design process ..."

Major growth in the Canterbury horticultural sector is a prospect which could result in profound social changes in some localities and significant environmental issues resulting from changed and intensified use of many natural resources. There is a potential for conflict between horticultural development and established resource uses, or with parallel resource development initiatives within the region. Community structure and social dynamics may change significantly.

An 'anticipatory' approach to horticultural development planning would be guided by regional social objectives and would seek to consider environmental, social and economic issues together within a rational planning framework.

1.2 The Approach

This study is concerned with two related problems.

In the first instance, how can the private sector be assisted to achieve development of Canterbury horticulture so that regional development objectives such as reduction of unemployment and stimulation of the regional economy occur? This question is addressed through a review of: the general characteristics of New Zealand horticulture and a discussion of the corporate/industry planning concepts which are applied to its development (chapter 2), the recent performance of Canterbury horticulture, its internal characteristics, strengths and weaknesses (chapter 3), and in the discussion in chapter 5.

The second issue is, how can an 'anticipatory' planning approach be accommodated with corporate strategic planning so that a more balanced and rational approach to development is achieved? The issue has a regional focus and therefore a regional planning framework is the logical one to apply. However, regional planning is purposefully selected because it has been widely acclaimed as the logical locus where local and national interests can be reconciled and focussed effectively on integrated environmental/social/economic planning. Chapter 4, therefore, reviews Canterbury regional planning to identify elements of anticipatory and strategic horticultural development planning approaches in current regional planning. Finally, chapter 5 discusses current regional planning with a view to the manner in which anticipatory planning approaches would be used to assist the satisfactory development of horticulture in Canterbury.

This study does not seek to prepare a strategic plan for Canterbury horticultural development, nor to apply anticipatory planning to that development prospect. Rather, it is a piece of 'diagnostic' research, in the sense of Mitchell (1979). It seeks to define the nature of the problems associated with applying anticipatory and strategic planning approaches in future horticultural development planning. The author is optimistic that along the way that exercise will reveal specific issues which warrant further investigation by responsible authorities in Canterbury, and assist their task of Canterbury regional development planning.

2. THE NEW ZEALAND HORTICULTURAL SECTOR

2.1 Introduction

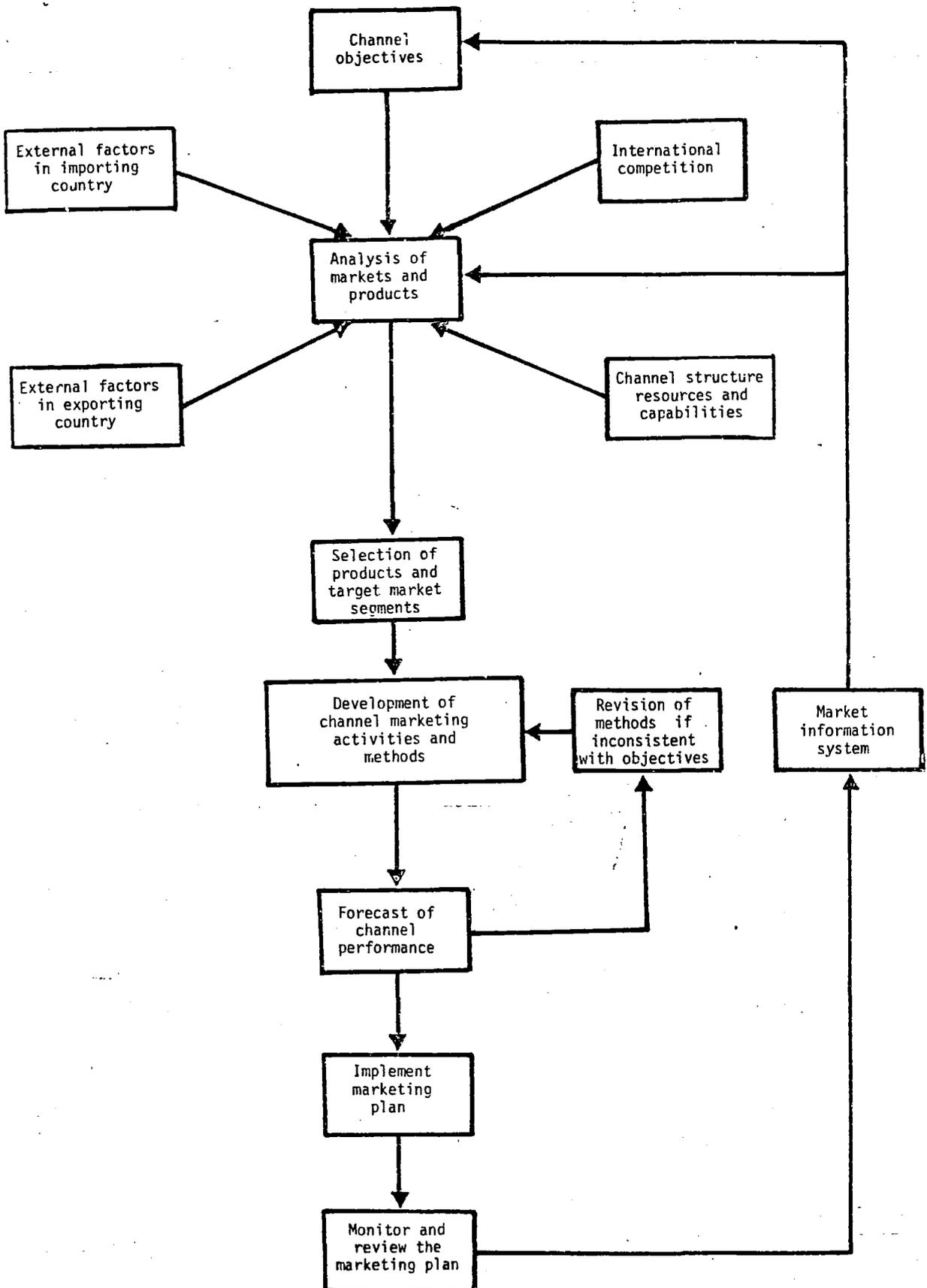
Amongst other things, successful planning of horticultural development as part of a wider task of societal planning (as distinguished from the industries' particular planning effort) must be based on a sound understanding of the characteristics of horticulture as an enterprise and a sector and its role in the community. This is likely to involve an appreciation of the industries it comprises, their inter-relationships, history, the components of each horticultural industry and their inter-relationships, the impact of horticulture on other sectors and the community and the external (outside New Zealand) and internal (domestic) factors which influence the sector's performance. From this understanding, horticultural development opportunities and constraints are likely to be revealed, fall into perspective and possible development options be ascertained.

The task faced by the industry in planning is illustrated by the schematic 'export channel market planning model' illustrated in figure 2.1. The formulation of an approach enabling society to integrate horticultural development issues with wider resource allocation and use has received less attention. This chapter reviews the general characteristics of the New Zealand horticultural sector as a background to the discussion of planning issues related to the development of Canterbury horticulture in later chapters.

Bollard (1981) offers the following working definition of horticulture:

"that sector of agriculture concerned with the production of fruit and vegetables, nursery plants, cut flowers, and foliage, whether grown outside or under cover, whether intended for home consumption or

Figure 2.1: Horticultural export channel market planning model
 Source Rae and Bourke, 1981.



export, for fresh use or processing. Harvesting, handling, packing, transport and storage are all regarded as components of the overall production process ... Commercial horticulture involves the manipulation of many varieties of a large number of plant species, often managed in a variety of highly contrived ways."

The cropping of seeds, including cereals and pulses, is not here defined as horticulture, but as 'arable' agriculture. Horticulture may thus refer to any one or number of a range of different groups of activities, each with different requirements. Each of these groups of activities will be based on any combination of the different horticultural crops, including all phases of its production from selecting and/or preparing the site, to processing, transporting and marketing the products.

2.2 Characteristics

2.2.1 As A Resource Use

The intensive nature of land and resource use generally distinguishes horticultural production from other forms of agriculture. When compared with pastoral agriculture, horticulture requires greater quantities per unit land area of: labour, capital, recurring chemical inputs, and management. At this time horticulture generally provides a higher rate of net return and higher full-time and seasonal labour requirements per unit area than pastoral farming, and can thus sustain an economic farming unit of smaller size. The indirect social, economic, and environmental impacts of using land for horticulture are generally greater than those resulting from extensive agriculture. The specificity of horticulture's climatic, edaphic (soil), and cultivation requirements also serve to distinguish it from extensive agriculture. For example, horticulture is generally restricted to the higher class soils.

Within the horticultural sector, the climatic, soil, labour, skills, processing, capital, storage, transport and marketing requirements for different products range widely. The markets for horticultural products, their locations, and their stability are more variable and less easily identified than those for extensive agriculture.

2.2.2 In Terms Of Industry Structure

The horticultural sector is a complex one which might best be described as comprising a large number of different industries. Within each industry, the production and export sale of horticultural products encompasses a range of different organisations or 'actors'. These 'actors' include farmers (the 'production units'), transport operators, processors, exporting firms, marketing firms, wholesalers, and retailers.

The functional relationships between the structural components of the industry are distinctive and important factors which affect industry dynamics and development prospects. Rae and Bourke (1981) take particular note of those internal links resulting from the transfer of product from one organisation to another within an industry. They use these links to describe an 'export marketing channel' (figure 2.2). Such transfers within the industry take advantage of specialised contributions from a range of different firms. Their joint efforts result in the completion of the steps required to transform available resources into horticultural products purchased by the consumer. There are likely to be a number of such 'export marketing channels' (figure 2.3) within any horticultural industry.

Figure 2.2: Generalised horticultural production and marketing channel. Source: Rae and Bourke, 1981.

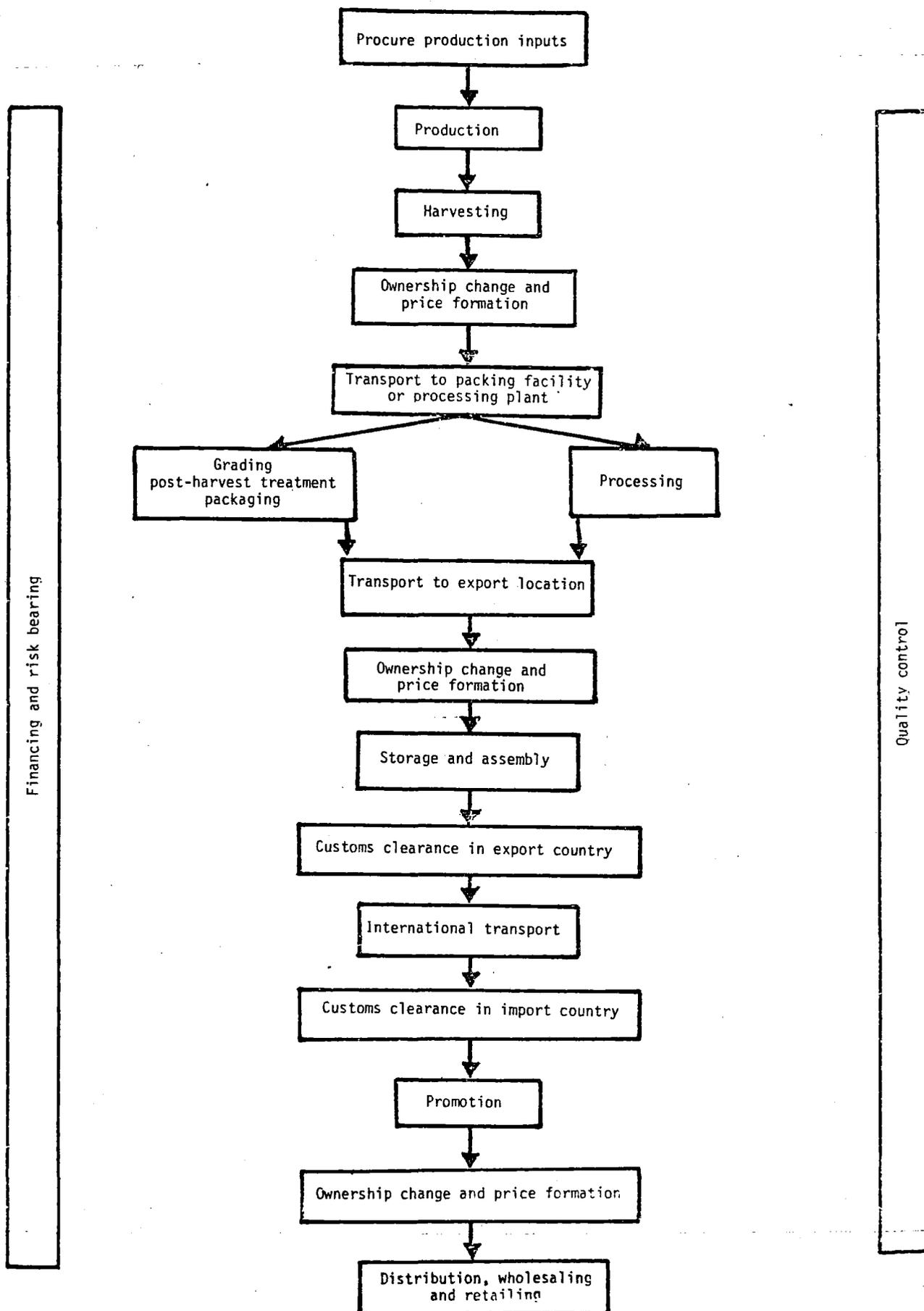
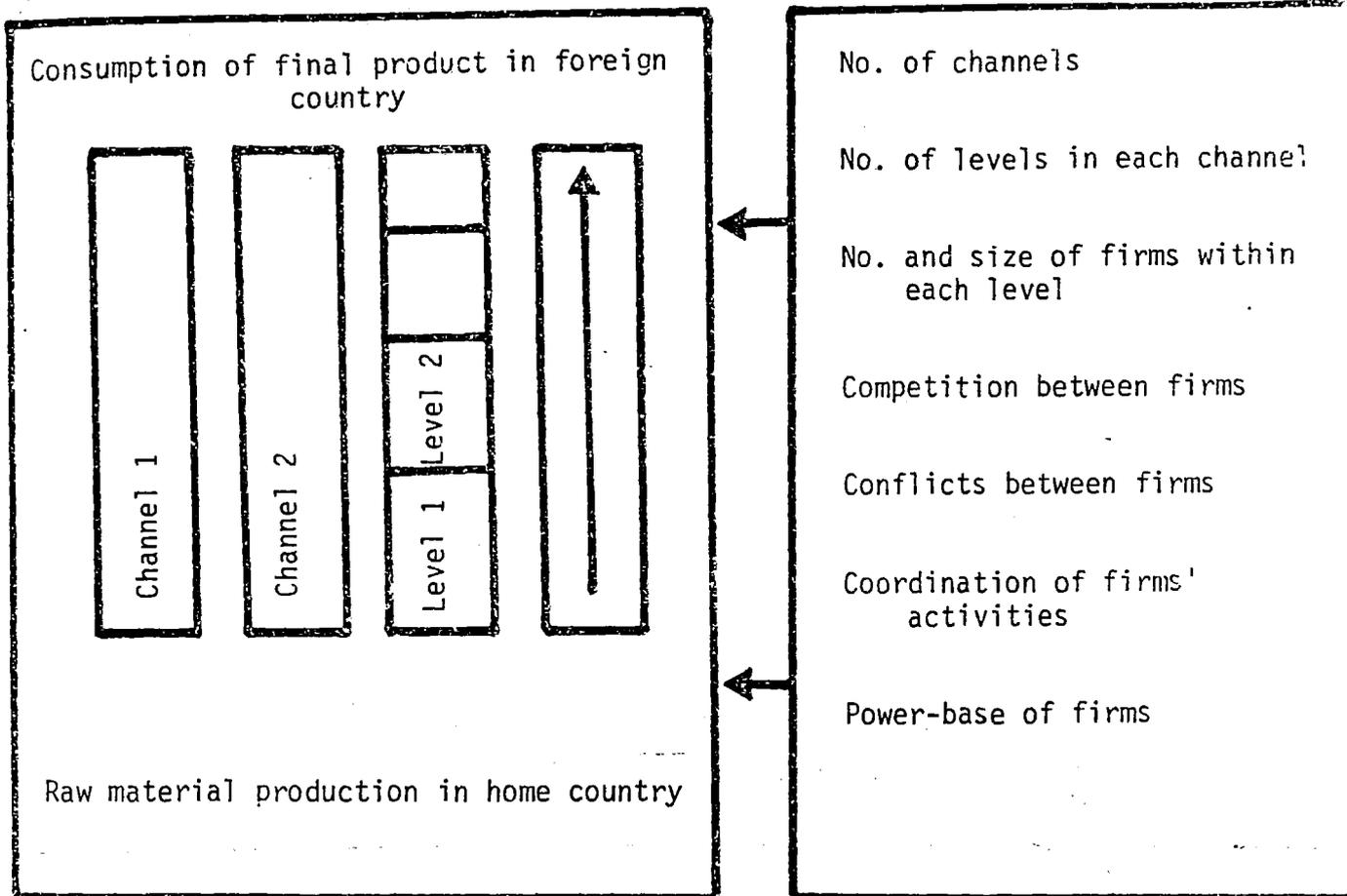


Figure 2.3: Typical structure of horticultural export marketing channels. Source: Rae and Bourke, 1981

THE EXPORT MARKET CHANNELS

CHARACTERISED BY



2.2.3 Institutional Arrangements and Legislation

These reflect the diversity of industries involved in the sector. The public sector plays the central role in research, liaison, co-ordination and advisory services. Between the private sector and government, a number of quasi-governmental agencies and corporations play important roles in co-ordinating effort. Some industries are very tightly regulated by private sector sponsored groups, each with their own marketing authority. Other industries are more loosely organised, with voluntary affiliations of growers at regional or national level which provide some coordination and cooperation. Generally, those industries which primarily cater for the domestic market are less coordinated and more internally competitive. The export trade rewards more cooperation within an industry. There is a growing involvement of large businesses such as farm service companies (eg, stock and station agents and transport firms) at all levels within the horticultural sector.

Various DSIR divisions, including Crop Research, Entomology, Plant Diseases, and Plant Physiology, are responsible for much of the basic horticultural research carried out by the government. MAF research division also contributes to the research effort, using some of its 24 research stations scattered throughout the country. MAF's major role is, however, the provision of liaison and advisory services. MAF provides information services, such as the AgLink information leaflet services. MAF advisory services division has a core of advisory officers who have specialised knowledge of particular crops and it also employs about 20 horticultural advisory officers who are based in the districts and each have a responsibility within a particular geographical area. MAF economics division carries out background research of a more general nature. Of particular relevance is the regional planning report series

which has looked at irrigation scheme prospects in relation to horticultural development in a number of regions.

The Department of Trade and Industry is concerned with the processing, servicing, marketing and trade dimensions of the horticultural sector. The role of Trade and Industry in market research is reflected in its sponsorship of export opportunity teams who have carried out a series of broad-based studies assessing some current overseas market competitors, market prospects and market dynamics. Horticulture or associated developments in priority areas, may be eligible for various forms of regional development assistance. These are vetted by the regional development council, if one exists in the area, and a final decision on an application for government assistance is made by the Department of Trade and Industry.

The universities, particularly Massey and Lincoln, educate and train many of those who may later work in the horticultural sector. They also carry out research. For example, Massey University supports a market research unit and Lincoln College an agricultural economics unit.

The Rural Banking and Finance, and the Development Finance Corporations both provide development capital for much horticultural development. However, this assistance is largely allocated for proven, low risk prospects.

Regional resource planning associated with horticultural development is mainly carried out by the Ministry of Works and Development, NWASCO and MAF economics division. For example, the MWD vets major public investments in infrastructure such as transport networks. The MWD, NWASCO, MAF economics division, and

the regional water boards all play a part in research into major water resource developments (eg, community irrigation schemes), which may be useful for some horticultural developments.

The New Zealand Export-Import Corporation is a government corporation providing services for prospective exporters, such as carrying out market research and promotion. For example, it sponsors a small horticultural (marketing) research unit. The Horticultural Export Development Committee is a major quasi-governmental organisation which, until recently, played a central role in co-ordinating the sector. The committee included representatives of the production, processing and exporting sections of the industry, a professor of marketing, the general manager of the New Zealand Export-Import Corporation, a representative of Trade and Industry, and one from MAF advisory services division.

The most all-encompassing private sector horticultural organisation is the recently formed Horticultural Exporters Council. Some horticultural industries are tightly organised under mandatory control of a single authority. Examples include the New Zealand Kiwifruit Marketing Authority and the New Zealand Apple and Pear Marketing Board. Other industries are more loosely organised, typically through voluntary national and regional grower affiliations. Private sector initiatives by stock and station agents and transport companies are also developing new horticultural producer services.

Recent legislation has set up a horticultural export authority which provides for industry-wide export licensing where the industry as a whole endorses it. This allows regulation of those industries not covered by previous adhoc legislation. Any such authority will

provide a structure to assist in the development of successful marketing systems and provide market information for the client industry.

Other existing legislation directed at the horticultural sector concerns the control of plant diseases and pests and the protection of the quality of exported New Zealand merchandise. The Plants Act 1970 sets out conditions under which the government can prevent the export of those crops believed to harbour undesirable pests, diseases or toxic residues. This Act also gives the government regulatory powers over some actions of the industry. Existing regulations include the New Zealand Fruit and Vegetable Regulations (1975).

The entry requirements for export markets are very diverse and subject to change at short notice. In close cooperation with the Department of Trade and Industry, the MAF gathers and disseminates information on overseas import regulations. MAF provides an export quality certification service to those New Zealand growers who need to provide documentary evidence of their adherence to such regulations. It is also the government agency with the responsibility for implementing much of the legislation and regulations which apply to the horticultural sector.

2.2.4 Industry Dynamics

The 'export marketing channel' concept introduced earlier (figure 2.2), was used by Rae and Bourke (1981) in their analysis of export marketing within a number of different horticultural product industries. The concept draws attention to the functional relationships between the farmer/production level and the export marketer. It is useful to consider the industry as a 'production and marketing channel', because no one level of the process is intrinsically more fundamental than any other. At

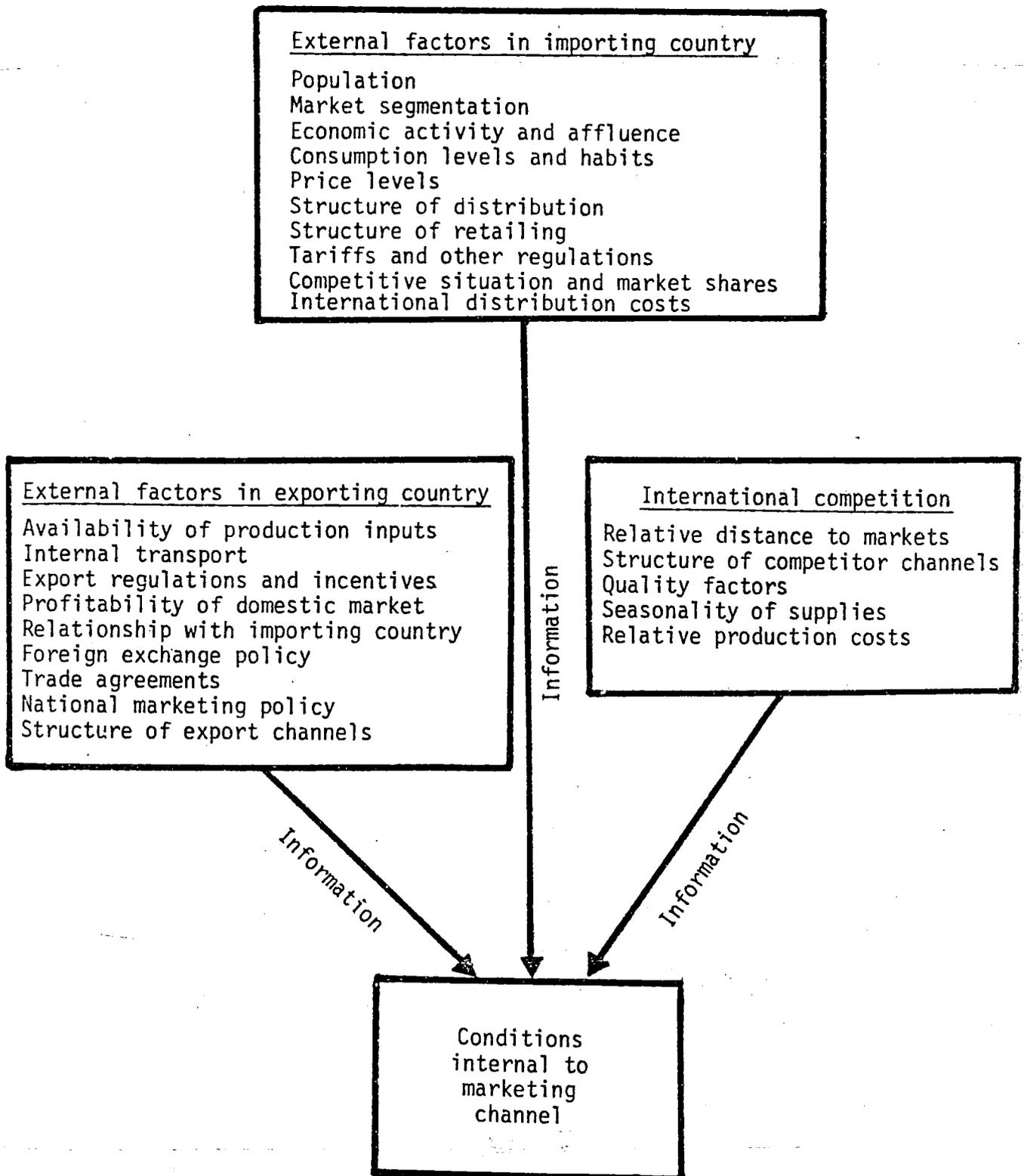
different times and in different ways, the operation of a channel may be limited by production, processing, transport, storage, exporting, and marketing.

Functional relationships between structural components of the 'production/marketing channels' are not limited to the transfer of the product from one 'level' of the channel to another. Components can cooperate, compete, or obstruct their respective production tasks. For example, an export marketing firm may provide good market demand projections, assisting the production decisions of the primary producer. However, if an export marketing firm has control over the passage of product between the producer and the market, that firm may exploit this monopoly position to force purchase prices down, thus increasing the firm's own profit margins at the expense of the vigour of other market channel components.

Such internal functional relationships can affect the structure and performance of 'production/marketing channels'. External factors such as changes in market demand can also change a horticultural industry, as illustrated in figure 2.4. A successful horticultural industry must respond quickly and effectively to the influence of relevant external factors.

A 'segment' of the 'production/marketing channel' is here defined as any level of one channel, or any amalgamation of such levels or channels, which behaves as an integrated unit in its relationships with other such segments. Every such autonomous unit will have individual goals and 'behaviour patterns'. Thus there are likely to be instances of conflict and competition between such segments, and other situations where cooperation is easier to establish. Rae and Bourke (1981) describe the interactions between segments of 'production/marketing channels' in terms of cooperation

Figure 2.4: External environment of the exporting channel
 Source: Rae and Bourke, 1981.



(or coordination), competition, and conflict. Interaction may occur vertically (ie, between different levels of the one channel), or horizontally (ie, between the same levels of alternative channels).

Rae and Bourke (1981) describe the manner in which cooperation, competition and conflict affect the internal dynamics of an industry and influence its development. In the long term, conflict and competition help prevent excessive inefficiency at any level in an industry, and encourage innovation and the adoption of new techniques. However, in the short term excessive competition and conflict can slow down industry development. Excessive conflict can be very damaging to an industry. Cooperation (or coordination) is a means of achieving economies of scale and receiving other mutual benefits, such as more effective response to external factors, and of preventing unnecessary competition. Thus competition and cooperation should be in balance within an industry whereas conflict should be kept under control.

2.3 History

Horticulture has been an integral part of New Zealand society since before European settlement. For example, the Maoris are known to have cultivated kumara, taro and gourds in their gardens before the arrival of the Europeans. Following European settlement, Maori communities rapidly adopted European technology and land management practises. The Maoris also began to cultivate new crops such as the potato.

In the early days of European settlement and resource development, a large measure of horticultural self-sufficiency was the rule for most communities. Small markets, poor internal communications, high transport costs, and the difficulty of keeping produce fresh, were

probably the factors responsible for restricting trade in most horticultural products. Where such trade existed, it would have been largely confined to those markets close to the place where a product was grown.

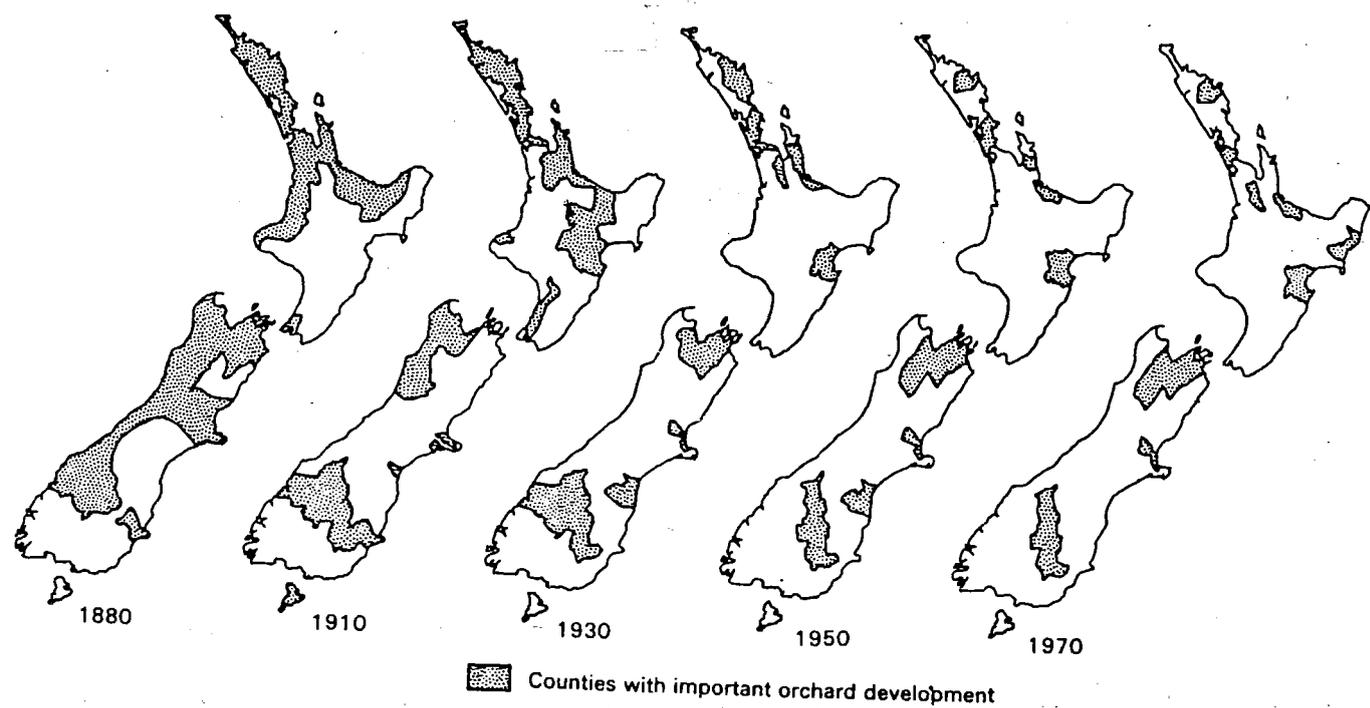
The changes in location of the areas of significant commercial orcharding in New Zealand over the 1880-1970 period (figure 2.5) as depicted by Molloy et al (1980), are probably paralleled by analogous changes in the spatial distribution of our commercial horticultural production.

This suggests that during the late 19th and into the early 20th century, a process of rationalisation of the areas of production of many horticultural products took place. This corresponded with the decline of some early settlements and their associated horticultural land. It is probably significant that this redistribution and growth in horticultural activity was paralleled by improvements in communications, the growth of transport networks and improvements in their reliability, the development of major population centres and thus the evolution of an extensive system of marketing and trading in horticultural products.

By the 1930s a pattern of distribution of areas of significant commercial orcharding activity similar to that found at the end of the 1970s had developed. Presumably this pattern reflected land suitability for commercial horticulture, governed in some measure by those economic factors which influence the viability of horticulture. Important determinants of this pattern are likely to include biophysical factors such as climate, soil type, availability of water and ease of control over major pests and diseases, but also socio-economic factors such as existing land use, history, availability of skills and services, land area suitable for the product, transport systems, existing processing and storage

Figure 2.5: Changes in commercial orcharding in New Zealand, grouped by counties .

Reproduced from: Molloy et al. (1980)



facilities, and proximity to particular markets. The importance of any one factor will depend on the horticultural product in question.

Exported production from the horticultural sector has increased steadily since the 1950s (figure 2.2). This corresponds with a period of market development, primarily within New Zealand, but most significantly overseas. The principal products exported over this period were pip and stone fruits, dried peas, onions and processed vegetables.

During the mid 1960's the growth rate of the value of horticultural exports accelerated. This growth rate accelerated further in the late 1970s. As shown in figure 2.3, the increased value of fresh fruit (most notably kiwifruit, but also apples) are the main products associated with this new development. The total value of horticultural exports increased by about 20% per year through the late 1970s (Rowe 1983).

2.4 Current Trends

Further increases in New Zealand exports of selected horticultural products are likely to result from: good export prices and favourable trends in market demand; advances in product processing, packaging, storage, and transport; and new marketing strategies. The New Zealand horticultural sector's ability to take advantage of these trends will depend on the evolution of increasingly effective industry organisation oriented to internal efficiency and co-operation within market/product channels and fast and appropriate response to changes in external factors.

Recent trends are associated with the development of products such as kiwifruit, and their corresponding markets. However, exports of traditional horticultural products such as apples and onions are also increasing.

Bollard (1981) discusses the strengths and limitations of New Zealand horticulture in order to account for the success of its recent initiatives and to understand what factors are likely to govern its future expansion.

He observes that the best of New Zealand growers are highly efficient by world standards. Many growers are innovative and this flexibility is reflected in their attitude to more intensive production systems, new management practices, and new varieties. Through the expertise of government agencies and private industry, the potential best of the world's varieties of many crops are available here.

As a southern hemisphere producer we are able to supply out-of-season produce to population centres in the northern hemisphere. New Zealand local climates range from cool temperate, to cool sub-tropical, allowing the cultivation of a wide range of different crops. Rainfall is such that irrigation is not always essential in many areas. However, irrigation schemes exist or are being developed in many areas of particular need. Our wind-prone climate results in a need for considerable shelter for most crops.

Many of those areas currently devoted to horticulture possess the best and most easily developed of our soil resources for that use, but in most districts there are very large areas of suitable soils that are at present undeveloped.

Many of the numerous diseases of major crops are not yet found in New Zealand, and this means that both our fresh horticultural produce and our live plants are readily acceptable in many overseas markets.

There are a number of factors which Bollard (1981) considers limit the development of New Zealand horticulture. In comparison with some of our present or

possible future competitors, New Zealand has high internal costs for labour and transport. Internal transport services and costs are likely to have a determining effect on the location of future horticultural developments.

The recent boom in horticulture may exacerbate a shortage of people with the appropriate technical or managerial skills. The horticultural sector encompasses a large and diverse range of product industries. Therefore, a lack of organisation of some industries could result in undisciplined exporters jeopardising potential new markets before they become soundly established. Because some of these industries are small, it may be difficult to sustain a significant supply to large new markets when they are located.

The external shipping costs of supplying New Zealand produce to overseas markets are a major constraint on our penetration of some markets. Chudleigh (1980) observes that shipping freight rates have increased at a faster rate than other costs in the economy. There are considerable differences between the costs of refrigerated and non-refrigerated sea shipping rates. Both of these rates are considerably cheaper than the costs of shipping by air. Technical or innovative improvements may allow fresh produce, currently only air freighted, to be shipped by sea in controlled atmosphere containers. This may allow us to penetrate new markets for some horticultural products.

Changes in technology, marketing and management practices, but perhaps of most significance, changes in the attitudes and organisation within the horticultural industries have permitted the recent horticultural expansion. Molloy et al (1980) observe that the recent period of rapid expansion of horticulture corresponds with a negligible increase in the number of livestock

carried by the New Zealand pastoral agricultural system. Further increases in New Zealand pastoral agricultural production are likely to require intensification of land use and large capital investment. The recent successes of the horticultural sector, and favourable government tax incentives for horticultural investments, have resulted in an atmosphere of business optimism during which development capital has moved from other sectors of the economy into horticulture. In some cases, this may be at the expense of further intensification of pastoral agriculture. In view of the potential diversity of the horticultural sector, its further development could provide greater security for the New Zealand economy by reducing our dependence on a small number of products and markets. Nevertheless, it is important to recognise that, with few exceptions, New Zealand has not established stable, large scale export contracts to supply horticultural produce on a co-ordinated basis (Regional Development News, March 1981, page 15). However, such market stability may not always be a realistic goal because horticultural industries are characteristically small and try to take advantage of lucrative market windows which appear around the world. Such a strategy requires a well organised and innovative industry.

Large amounts of private sector capital are being invested in horticultural development. This is a reflection of the profits currently being made by some growers, and favourable financial fringe benefits which may result from the investment. For example, Thiele (1983) points out that investment in horticulture may qualify as a tax-saving measure, an attractive lure for professional people with other income and money to invest. However, the provisions of the 1982 budget limited the claims of development expenses against tax to \$10,000 per person per year. Some large corporate

investors are also diversifying into horticultural developments.

At the national level, government views horticultural development as generally desirable. The tax-saving measure already mentioned is in effect a substantial subsidy of horticultural development, one indicator of government support. Horticultural development also receives government assistance in the form of research and advisory services, and may be eligible for various forms of government development loans. Thus the government is anticipating and actively encouraging diversification and increase in New Zealand horticultural exports.

Overall, future prospects for the horticultural sector warrant cautious optimism. This optimism should be tempered by informed, planned and co-ordinated development within and between the horticultural industries.

2.5 Implications of Horticultural Development

2.5.1 General

As a productive resource use, horticulture places demands on land, water, capital, skilled expertise, and other incidentals such as plant and machinery, fertiliser, chemical herbicides, fungicides and pesticides, energy; also on storage, processing, and transport facilities. It is likely to result in a myriad of second-order social, economic and environmental impacts. These will include: generation of opportunities for secondary industries, social implications of changed employment patterns, probable changes in land ownership, and physical/biological impacts on the environment at a number of levels. These impacts and resource use changes will be associated with a range of regional servicing and infrastructural demands. The magnitude of such effects will depend on site attributes and location, and the product being developed.

2.5.2 Regional Economic Impact

Regional income is generally increased by horticultural development. Factor inputs and servicing requirements of horticulture captured within the economy are much higher than those associated with less intensive land uses.

Other potentially significant economic impacts of horticultural development are likely to be its effects on land values and land ownership. To illustrate this, table 2.1 compares some economic and land use parameters of a kiwifruit orchard with those of a dairy farm, both located in Tauranga County. From table 2.1 it is clear that kiwifruit development provides a higher return per unit area and per dollar investment capital than dairy farm development. Given the high capital cost of kiwifruit farm development, its high returns per unit area almost inevitably result in land subdivision. By 1980, the high financial return per unit area and per unit investment capital had inflated the average price of horticultural land in the Bay of Plenty to about \$34,000 per hectare. Rowe (1983) observe that this effectively capitalises a substantial part of future earnings into the purchase price. This reduces the return to the prospective developer. But these future earnings may be less than anticipated given the predicted dramatic rise in kiwifruit production and possible resulting market oversupply. For example, Kerohan and Sale (1983) predict a ten to twenty-fold increase in total kiwifruit production between 1982 and 1992! The speculative value of potential horticultural land in the area is likely to displace other land uses with a lower return, for example dairy farming, into other areas where suitable land can be purchased for a lower price.

There is a high element of risk in the current reliance of the horticultural boom largely on one cultivar of

Table 2.1: Costs of establishing, and likely returns from, a dairy farm or a kiwifruit orchard in Tauranga County in 1976. Reproduced from: Bollard (1981)

	Dairy farm	Kiwifruit orchard
Total area	88.7 ha	14.2 ha
Effective area	87 ha	12 ha
Cost of establishment	\$341,000	\$284,000
<u>After 10 years:</u>		
Annual export value of production: total	\$ 65,000	\$ 312,000
per ha	\$756	\$ 26,000
Accumulated export value	\$ 628,600	\$ 1,235,000
Annual net income: total	\$ 23,000	\$ 150,000
per ha	\$264	\$ 12,500
Accumulated income	\$ 221,000	\$ 588,000

each of the three major crops: kiwifruit, apples, and onions. Rowe (1983) observes that each cultivar has a finite economic life cycle. This is likely to be influenced by the development of disease and pest problems, increases in product supply, and changes in consumer preferences. It may culminate with market saturation and a consequent fall in product price. From the point of view of land tenure, such a cycle may result in extensive early subdivision of land, with later amalgamation to larger holdings or change to a new product as the net revenue per unit land area for the first product declines with industry maturity.

2.5.3 Social Impacts

It would be difficult to list all of these, they range from the direct and immediate (eg, more intensive settlement as a result of smaller sized economic unit and greater labour requirements per unit land area) to the subtle and longer term (eg, changes in patterns of community life). A number of recent studies have looked closely at the impacts horticultural developments are likely to have in particular regions. For example, Stokes (1983) and Martin (1983) have examined particular impacts of kiwifruit orchard development on the Bay of Plenty region. Dialogue Consultants et al (1984) recently completed a detailed study of the social and economic planning implications of an existing Kerikeri irrigation scheme and its associated horticultural development.

A major current concern of planners in relation to horticultural development are the associated labour requirements, the implications of this in terms of local population and secondary implications in terms of housing, per capita income, and seasonal migration.

Horticultural development is likely to have a substantial effect on rural employment. As table 2.2 shows,

Table 2.2: Number of workers per 100 hectares in different types of farming (situation as at 18 April 1979)
Reproduced from: Bollard (1981)

Type of farm	Full time workers ¹	Part time workers ²	Casual workers ³	Total number of workers ⁴	Weighted number of workers ⁵
Sheep farming	0.31	0.19	0.07	0.57	0.44
Beef farming	0.48	0.55	0.02	1.05	0.76
Cropping	1.13	1.32	0.13	2.58	1.89
Dairy farming	2.28	0.77	0.09	3.13	2.70
Market gardening	6.07	4.03	4.10	14.20	10.13
Orcharding	11.11	6.72	13.79	31.62	21.37

¹ Includes all working owners and all full time male and female workers.

² Includes all family members and permanent male and female workers working part time.

³ Includes all casual and seasonal workers.

⁴ Includes all workers, full time, part time and casual.

⁵ A hypothetical figure made up of the number of full time workers plus half the number of part time and casual workers.

Source: Data from Agriculture Census, June 1979, Department of Statistics.

horticulture in the form of orcharding is likely to produce about six times as many permanent jobs per unit area as dairy farming would provide. Orchardring requires large numbers of seasonal and part-time workers. This will have significant effects on the pattern of rural settlement distribution in some areas, probably swelling the populations of the rural service towns.

Martin (1983) for example, points out that if present trends continue, the New Zealand kiwifruit industry could require 37 200 seasonal workers by 1990. The industry would only require this labour over the May-June period. By contrast Bollard (1981) estimates that only 3400 casual workers were required by the whole New Zealand horticultural industry in 1979. A more recent study by Martin (1984) has also looked at labour requirements for horticulture throughout New Zealand.

When considering such data one also needs to know the characteristics and aspirations of the labour likely to be available within any horticultural district.

2.5.4 Environmental Impacts

The environmental implications of horticultural development are likely to be diverse and variable, depending on location, crop management, and the product. Generally, horticultural development will have a dramatic visual impact on the landscape, with shelterbelts, etc being highly visible. In some situations and to particular individuals such a visual impact may be regarded as a positive, whereas others may regard it as a detrimental, impact. The change in rural settlement patterns will alter the demand for rural services, for example, sewage disposal and transport networks. The heavy use of chemicals characteristic of horticulture may have undesirable effects on both natural ecosystems and human

populations. There is a lot of controversy over some of these impacts because they are difficult to detect, and thus a lot of opinion characterises discussion of the resulting issues. The chemicals used include fertilisers, fungicides, pesticides and herbicides. The most likely feature of the environment to be contaminated are water systems. The demand of horticultural development for resources, such as water for irrigation, may have further environmental implications.

2.6 Conclusion

The horticultural sector is a diverse one which includes a wide range of products requiring more intensive land use than pastoral agriculture or forestry. It is useful to visualise the sector as a number of different product industries, each consisting of a network of production and marketing channels.

The public sector plays a large part in research, product development, quality, disease and pest control, advisory and information services, some marketing, industry coordination and irrigation development. It is also a substantial source of development capital for the sector. The private sector is involved in production, packing, processing, most marketing and industry coordination, and some transportation services.

The New Zealand horticultural sector has been growing steadily since the 1950s but its growth rate over the 1970s and early 1980s has been phenomenal, particularly on the export side. Most people are familiar with the role of kiwifruit in industry growth but fewer realise that the growth in vegetable and other fruit production for export has been equally dramatic. There is a prevalent mood of optimism and enthusiasm with regard to the sector's future prospects.

Successful future development will require efficient internal organisation and cooperation within each

industry focussed on utilising export prospects. Industries will need to attune themselves to market signals and respond quickly to changes in external (to New Zealand) conditions.

Bollard (1981) suggests that the recent success of New Zealand horticulture can be attributed to innovation, efficient production, quality production, good cultivars, few diseases in the various industries and the advantage New Zealand has as an 'out-of-season' supplier to northern hemisphere markets. However, New Zealand was also probably aided by a change in consumer preference favouring increased consumption of quality fruits and vegetables at the time of the growth of the production in the horticultural industries. We rode the crest of a market trend and were thus literally selling to the converted. Factors which will limit the growth of New Zealand horticultural exports include high internal labour and transport costs, poor transport services, high external freight costs, and increased competition in international markets.

Horticultural development and its impacts are likely to be localised in particular regions. In terms of employment, factor inputs, servicing and secondary industries, the effects on regional economies will be greater per unit production area than pastoral agriculture or forestry. The value of land with horticultural potential in these regions will reflect, in part, their potential return in that land use.

Social impacts will be associated with the effect of the increased permanent and seasonal workforce requirements per unit area of land in horticulture as contrasted with less intensive pastoral or dairy farming use. This will result in increased density of rural settlement, more servicing industries and the associated in-migration of the necessary workforce. The scale of the changes which

may occur is indicated by the expectation that the seasonal workforce for New Zealand horticulture will increase from its 1979 level of 3400 to 37 200 by 1990.

The changed visual appearance from shelterbelt planting and more intensive settlement will be one obvious impact on the landscape. In some instances in the Bay of Plenty this visual impact has been accentuated by terracing. Horticulture characteristically involves intensive use of fertilisers, herbicides, fungicides and pesticides, and this is perceived as degrading the environmental quality and is likely to be associated with increased incidence of health problems sometimes caused by the use of some of the chemicals. Water resources will be affected by irrigation water demands and household water requirements resulting from more intensive rural settlement. Some freshwater ecosystems may be degraded and the quality of downstream or down-catchment household water supplies reduced through contamination from surface runoff or leaching into groundwater systems.

3. HORTICULTURE IN THE CANTERBURY REGION

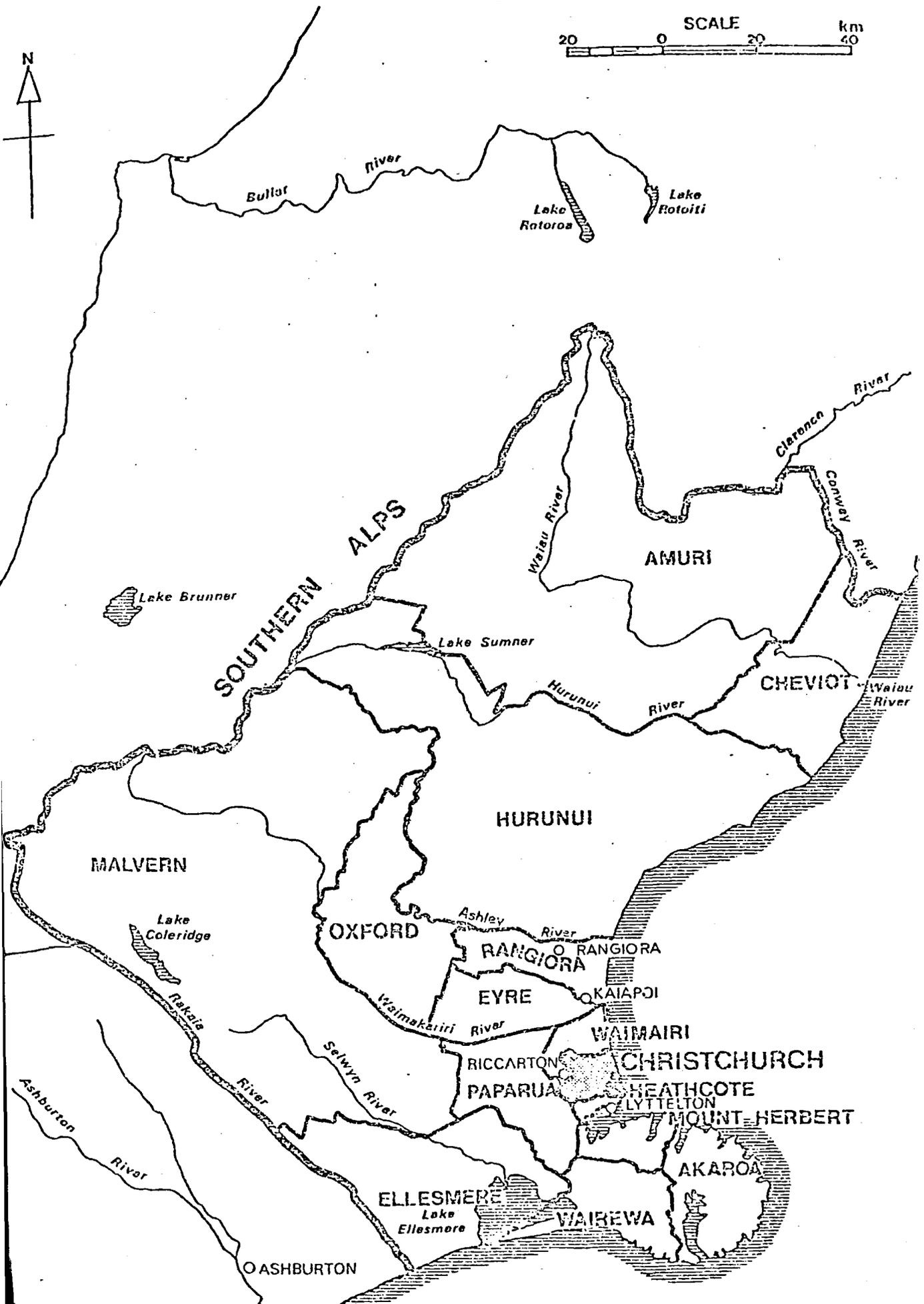
3.1 Introduction

This chapter reviews recent performance of the Canterbury horticultural sector and examines some of those internal characteristics which may influence its future development. Unless otherwise stated, 'Canterbury' refers here to the Canterbury region as defined by the Local Government Commission for the purpose of statutory regional planning (figure 3.1).

From a broadly regional perspective, the performance of the horticultural sector is measured by its contribution to regional goals and objectives. For example, these are likely to include business prosperity as well as particular changes in regional lifestyles, community life, use and management of natural resources, and contribution to the relief of regional unemployment. Therefore, aggregate horticultural production estimates and industry profits are not necessarily reliable indicators of the contribution to regional goals by horticultural operations and development.

It is useful to visualise the Canterbury horticultural sector as a system of industry production and marketing channels as discussed in section 2.2 and illustrated in figures 2.2 and 2.3. As indicated shown in figure 2.4, factors external to the Canterbury horticultural sector will influence the future development of Canterbury horticulture. These include market characteristics and behaviour, the character and performance of international competition, and features of the New Zealand horticultural sector as a whole. However, it is the internal characteristics of the Canterbury horticultural sector which are the subject of this chapter.

Figure 3.1: The Canterbury United Council Region as defined by the Local Government Commission as of 1981. Source: Canterbury United Council (1983b).



These internal characteristics position Canterbury horticulture in its wider national and international context and indicate its potential to adapt and take advantage of external conditions. The characteristics include the salient features, performance and interaction of different levels of the production/marketing channels for the various horticultural industries (illustrated in figure 2.2). They can be crudely differentiated into 'production' factors; such as climate, land and its suitability, water supplies and shelter, labour and management, and capital; and 'non-production' factors, such as research and product development, transportation, processing and storage, marketing and industry organisation.

Less tangible but no less important influences such as the degree of enterprise and enthusiasm of individual operators, the mood of the industry and the attitude of the people in the region to the development of horticulture will also affect the growth performance of the Canterbury horticultural sector. If the contribution made by horticulture to such things as regional economic growth and employment creation is marred by poor working conditions and associated social problems, by unsatisfactory natural resource management practises, by disregard for community needs and values, or by heavy tax and rate payer subsidy of horticultural services and infrastructure, then community attitudes to horticultural development may not be favourable.

TABLE 3.1: AREA (ha) USED FOR HORTICULTURE IN THE
CANTERBURY PROVINCE. 1979-82

Source: MAF agricultural statistics

PRODUCT	YEAR		
	1979	1980	1981
Raspberries	55	56	91
Strawberries	23	23	33
Blackcurrants	229	188	599
Blueberries	1	5	12
Boysenberries	8	9	17
Other berryfruit	1	8	9
TOTAL BERRYFRUIT	317	289	761
Pipfruit	284	289	299
Stonefruit	64	64	75
All vegetables	3,521	3,604	2,452
Process vegetables	2,123	2,142	1,170
TOTAL HORTICULTURE (except fresh vegetables)	2,788	2,784	2,305
Heated or cold glasshouses	193,143 ¹	223,290 ¹	155,405 ¹
Indoor mushrooms	180,600 ¹	?	103,709 ¹

¹ Cropping area in 000 m².

TABLE 3.2: AREA (ha) OF THE CANTERBURY REGION PLANTED IN SOME FRUIT CROPS 1981-1983

Source: Martin (1984)

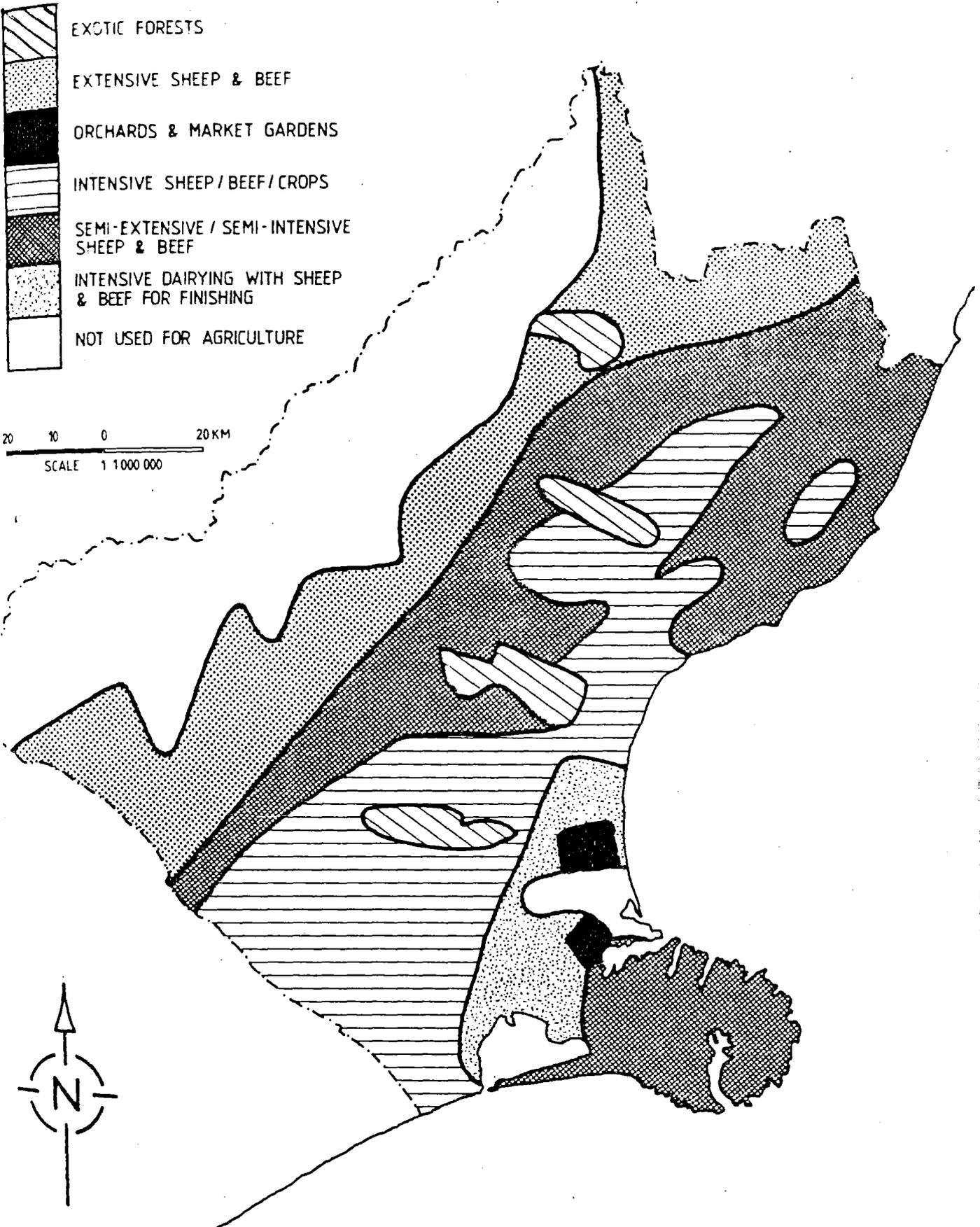
PRODUCT	YEAR ENDED JUNE			Annual Average Rate of Change in Area (%) 1981-83
	1981	1982	1983	
Pip or stonefruit	267	397	403	5
Citrus	0)	0)	2)	-)
Subtropical fruit	0) 2	0) 3	1) 6	-) 70
Kiwifruit	2)	3)	3)	-)
Grapes	17	20	39	50
Boysenberries, raspberries and blueberries	79	86	96	10
TOTAL	465	506	544	8

3.2 Recent Production Trends

Traditionally the Canterbury region has been associated with the production of meat, wool, and cereal crops. It is nonetheless one of the major horticultural producing areas of New Zealand, a most important aspect being the range of crops grown (MAF, 1977b). Its main traditional crops are onions, potatoes, berryfruit, and vegetables for processing. It also produces, largely for local or South Island consumption, substantial quantities of fresh pip and stonefruit, and fresh vegetables (table 3.1). Figure 3.2 shows the generalised land use pattern for the Canterbury region.

Over the late 1970s, New Zealand production of berryfruits increased significantly, and Bollard (1981) believed that this would continue to grow. In 1982, blackcurrants, mainly destined for export markets, were Canterbury's major berryfruit crop in weight terms. However, Thiele (1983), comments that recent very low prices for the fruit have made the production of black-

Figure 3.2: Generalised Land Use Pattern in the Canterbury Region. Reproduced from: Canterbury United Council (1983b)



blackcurrants so unprofitable to some farmers that they are moving away from the crop. The further development of that industry requires more efficient production, new product lines, and marketing initiatives.

Over the last few years Canterbury horticulture has shown signs of diversification, with rapid growth in certain new lines of fruit production. This is indicated by table 3.2, which shows the change over the 1981-83 period in the area of the Canterbury region planted in some fruit crops. Vegetable production (as shown for the years 1979-81 in table 2.1) fluctuates from year to year. The area planted in some traditional pip, stone and berryfruit crops appears to be increasing steadily, but a rapid increase in the area planted in grapes has occurred (table 2.2).

The production of grapes has received wide publicity as a result of public interest in the growth of specialist winemaking in the region. Herb growing also shows promise in Canterbury, heralded by the development of a commercial herb drying operation, growth of the local branch of a commercial herb growers association, a climate well suited to the production of herbs, and the rapid growth of specialty markets for high quality herbs. Increased production of some stone, pip and berryfruit lines plus substantial diversification into new product lines, suggest a good foundation for further growth in Canterbury horticulture.

Using the labour multipliers in table 2.2, a rough calculation suggests that the increase in the area planted in fruit over the 1981-1983 period will result in about 15 jobs directly in horticulture, with perhaps 15-22 more employed indirectly (assuming an employment multiplier of about 2, as used by Leathers et al, 1983, p 61).

If the rates of growth in the area of the Canterbury region planted in fruit crops (shown in table 3.2) con-

tinues until 1990, then about 1200 ha of additional fruit orchards and 500 full-time job equivalents would result. This relies on the direct labour multipliers for market gardening and orcharding shown in table 2.2, and assumes a ratio of 2:1 of all jobs (direct and indirect) would result from that scale of horticultural development (as used by Leathers et al, 1983). However, A Malcolm, the Canterbury Director of the New Zealand Fruitgrowers Federation, was quoted in a Horticulture News article (June 1983, p 13) as predicting that the area of Canterbury planted in fruit trees would double within three years.

3.3 Recent Development Problems

The recent problems experienced by the blackcurrant industry are a setback to the development of horticulture in Canterbury. Thiele (1983) comments:

"the blackcurrant story has not been a happy one for some farmers, and already, two or three years after the establishment of large areas, they are being removed as unprofitable... The trouble is that yields have varied from less than 1 t ha⁻¹ up to more than 10 t ha⁻¹, and the combined effect of low yield and low price has been crippling. Many low-yield areas provide important examples of farmers neglecting the exacting demands and skill required in growing horticultural crops as well.

In spite of skilled production technique, there is no way that blackcurrant production can be profitable at prices below 55-60¢/kg to the grower. Prices ruling recently below 40¢/kg are quite unrealistic. Whether or not a blackcurrant marketing authority could have improved the situation by eliminating a number of weak sellers is questionable. Nevertheless, the price recession could have some positive results in forcing

the blackcurrant industry to get its 'marketing act' together and to encourage the development of processed products, such as juice, dried or frozen products, of interest to the market."

This observed ten-fold variation in yields between different producers suggests that cultivar selection, site selection and/or crop management by some producers was unsatisfactory. Many blackcurrant plantings have been made by pastoral or mixed dropping farmers hoping to supplement their incomes while writing off development costs against profits in their main operations.

This may be a useful means for the region to finance the high capital inputs required for horticultural development. However, it appears that many farmers have failed to provide the careful product planning and crop management required for successful horticultural production.

There have also been a few localised horticultural development problems, eg, objections by Prebbleton residents to the odour generated by the 'Meadow Mushrooms' operation and undesirably high water tables in some areas downcatchment from the community irrigation scheme. More generally, the perceived potential impact of a proposed Central Plains Community Irrigation Scheme, a project which promises to irrigate some potential horticultural land as part of a larger area of pastoral and arable farming land, has been the subject of intense public debate.

3.4 Production Factors

(a) Climate

The Canterbury region possesses a variety of climate types which enable it to produce successfully a wide range of horticultural products. The central and northern lowland areas of Canterbury experience a warm temperate climate, with sharp winters. The low-lying coastal strips experience a cool temperature climate. Parts of Banks Peninsula are relatively sheltered and virtually frost-free.

The Canterbury region is subject to hot, dry, dessicating north-west winds during the growing season, and occasional cool south-westerlies. Precipitation is low throughout lowland Canterbury and on Banks Peninsula, but is lowest in the central plains region. The latter region, and many other areas of inland lowland Canterbury, possess large areas of free draining, stony soil with a very low moisture retention capacity.

In Canterbury shelter is an important means of reducing transpiration pressure (and hence water deficit) and wind damage to crops. No less important in most areas is irrigation according to the needs of the crop, to make up for recurring water deficits during the growing season. Drought years are a feature of the Canterbury climate.

Wind erosion of soil can be serious in central Canterbury. This problem is a result of the dry central Canterbury climate, removal of the protective vegetation cover by soil cultivation, and the frequent incidence of strong winds. The steps which can be taken to reduce this danger include shelter belt planting in areas of greatest risk, the careful planning of land cultivation activities, and appropriate land use controls.

Areas of the Canterbury region, particularly the coastal belt west, north and south of Banks Peninsula, are subject to occasional severe hailstorms. In some coastal areas during recent years, heavy mid-summer hailstorms have severely damaged crops. However, hail is a climatic event which also afflicts other horticultural regions, for example the Hawkes Bay and Nelson regions, but those areas continue to be important for horticulture.

The incidence of late frost is another factor which needs to be taken into consideration when a suitable site for stonefruit or pipfruit orchards is being selected.

(b) Land and Its Use

The Ministry of Works Land Use Capability assessment for the Canterbury region (figure 3.3) classifies the land into a series of capability classes designated 1 to 8. Generally, the higher the number, the lower the land capability for agriculture, and thus also for horticulture in most cases. Large areas of the central plains area of central Canterbury are included in Class 4, presumably on the basis of their stony composition and low moisture retention capacity. However, there are large areas of the central plains on the margins of the upper Selwyn River and its tributaries, which are classified in land capability classes 1, 2 and 3, presumably because of their relatively deep soils and high moisture retention capacity.

Leamy (1974) introduced the idea of classifying New Zealand soils on the basis of their actual or potential value for food production (implicitly through arable agriculture). The distinction

between actual and potential value is made on the degree of reification considered to be necessary to use the land for food production (Bollard, 1981) and thus for horticulture, notwithstanding the general requirement for shelter.

Table 3.3 summarises, on a county-by-county basis, those areas within the Canterbury region which would be classified as of high actual or potential value for food production. Thus 20 750 ha have actual value and 88 300 ha high potential value for food production. Factors which may have to be brought under control to adapt land of potential food production value for horticulture, include the provision of drainage, irrigation, and/or prevention of flooding.

Thus about 110 000 ha in the Canterbury region have high actual or potential value for food production (ie, not simply for grazing). According to Bollard (1981), this is about 4% of the New Zealand total area of such land. The land with such value for food production is, in the main, that land in land capability classes 1 and 2.

The Canterbury United Council (1983b) reported that 41 680 ha of the Canterbury province were used to grow cereal crops or dried pulses in 1980, and Bollard (1980) reports that a further 5620 ha were used for horticulture in the province in that year. Presumably the better soils were used for these purposes. Thus less than half of the suitable land in the Canterbury region is currently used for food production (excluding grazing stock).

Approved and Proposed Community Irrigation Schemes in the Canterbury Region
 Reproduced from: Canterbury United Council (1983b)

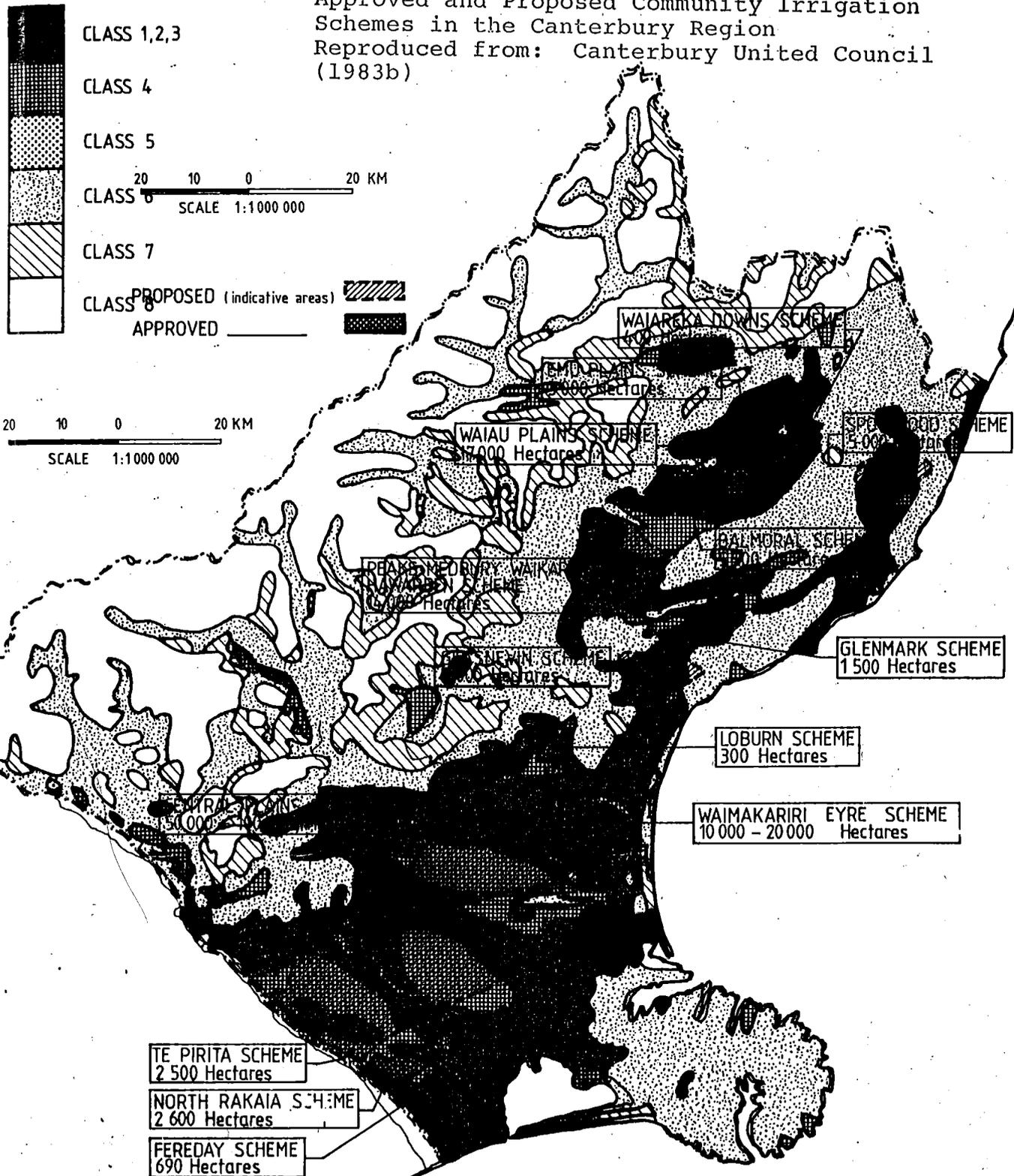


Figure 3.3

GENERALISED LAND USE CAPABILITY ASSESSMENT
 OF THE CANTERBURY REGION

Reproduced from: Canterbury United Council (1983b)

Table 3.3: Land with Actual or Potential Value for
Horticultural Production in Canterbury
on a County-by-County Basis
Adapted from Abraham (1980)

<u>COUNTY</u>	<u>ACTUAL</u>	<u>POTENTIAL</u>
Amuri	3,700	2,250
Cheviot	350	3,400
Hurunui	1,300	5,300
Rangiora	800	9,250
Oxford	2,000	2,500
Eyre	1,350	8,850
Waimairi	1,350	3,150
Malvern	4,500	14,250
Tawera	-	1,000
Paparua	1,100	6,950
Heathcote	100	300
Mt Herbert	100	-
Akaroa	700	-
Wairewa	1,750	-
Ellesmere	550	29,150
Halswell	2,450	1,950
TOTALS	20,750	88,300

According to Bollard (1981), 1006 ha of the land in Canterbury province was devoted to fruit production in 1980, which was 4.1% of the total area of New Zealand devoted to fruit production for that year. For the same year Bollard quotes MAF estimates of 4610 ha devoted to vegetable production in Canterbury province, which was 9.5% of the total New Zealand area in that land use for the year.

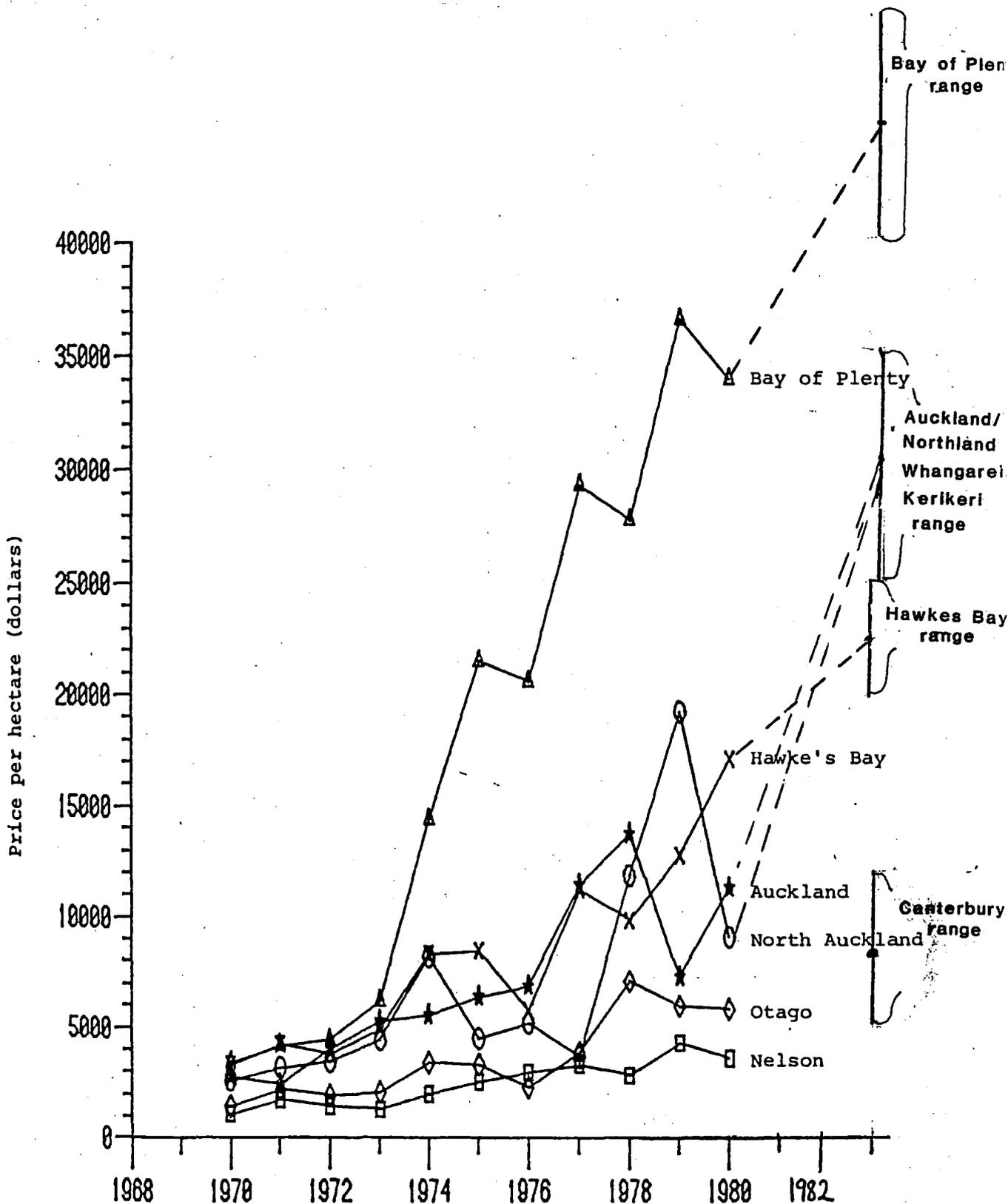
Figure 3.1 shows the generalised land use pattern in the Canterbury region. This indicates that most fruit and vegetable production in Canterbury is located in two small areas, located respectively immediately north and south of the Christchurch metropolitan area. It is clear that only a small proportion of the high quality soils (ie, land capability classes 1, 2 and 3) have so far been used for horticulture.

The market value of Canterbury land is another factor affecting its suitability for horticulture vis-a-vis other regions. Figure 3.4 shows that the current (1983) prices of good horticultural land in Canterbury are considerably lower than most other regions. This is an economic factor which favours the shift of some temperate horticultural crops to Canterbury vis-a-vis many North Island horticultural districts.

According to Rowe (1983), the historic dryland mixed pastoral-cereal cropping farm in Canterbury is a relatively large farm unit by New Zealand standards. He points out that this may allow Canterbury to think horticulture on a larger property scale than is historically the case or has generally been practised in the North Island. Rowe argues that a minimum economic unit size for stone-fruit production will be 25 to 30 acres in the very near future (Hughes, 1983).

Figure 3.4: Average sale price of Horticultural Properties in some Land Districts

Source: Valuation Department Farmland Price Statistics and Thiele, 1983



Existing Canterbury horticultural production is characterised by growers who devote a small acreage to any one product. For example, MAF (1977b) reports that in 1975, 65% of pip or stone fruit orchards were in the 0.4-2 ha range, 66% of berry-fruit orchards were in the 0-1 ha range, and 42% of all glasshouse owners had less than 300 m² of glass. This may be because their land holdings are very small, they grow a small area of a range of crops on their land, or are mixed cropping farmers who have diversified into small scale horticulture to supplement their earnings. However, a large proportion (39%) of market gardens were in the 4-20 ha size range. The latter may reflect a need for a larger economic unit to sustain market garden operations.

(c) Water and Shelter

Canterbury has a particularly dry climate with regular water deficits during the growing season. Thus some source of irrigation water is essential for successful production. However, the water requirements of horticultural crops are generally lower than for irrigated pasture. Irrigation costs are a lower proportion of total costs and revenues than for less intensive land uses. Therefore, location options for horticultural development are less likely to be sensitive to variations in irrigation costs between sites than to site attributes which affect crop yield. Shelter is usually necessary before horticultural crops are able to become established, particularly in Canterbury. Experiments by Sturrock (1975) with field beans grown in Canterbury showed a 66% (mean) increase in yield with shelter, 47% with irrigation and 178% with both shelter and irrigation. The yield response to shelter and irrigation in that instance was more than additive.

MWD land resource inventory maps indicate that land drainage may be necessary if horticultural development is to occur in some areas in Canterbury with soil and micro-climatic conditions otherwise suited to horticulture. However, land drainage can be an expensive process with detrimental impacts on adjoining wildlife habitat locations. Such secondary impacts of horticultural development may impose constraints on the development of some areas.

Taking all these factors into account, it is likely that shelterbelt planting must be given first priority in those areas most suited to horticultural development. Irrigation can be obtained from groundwater sources in most areas Canterbury, except for those areas of the central plains and some other places where the groundwater table is very deep, but those areas are not generally suited to horticultural development. The cost of providing irrigation from groundwater sources is not insignificant but is flexible to the need for horticultural units to be located at those sites which promise to yield the best quality and quantity of produce.

Nevertheless, irrigation development from many of the rivers in the Canterbury region has already begun and more is anticipated. Figure 3.3 shows existing, planned or proposed irrigation schemes as at September 1981. Horticultural development is associated with some approved schemes, for example the Waiiau Plains and Lowburn schemes. However, the potential for horticultural development following other schemes, for example the Central Plains scheme, has not been fully explored. Undoubtedly that scheme would present new horticultural development options, and may accelerate the

development of horticulture in the scheme area. However, if those resources were allocated to stimulating market and new product development, and the realisation of less costly horticultural development elsewhere in Canterbury, then perhaps greater development could be achieved.

The Chairman of the Nelson Catchment Board, Bill Eggers, suggests that small grower-led irrigation schemes could be more attractive to growers than large government backed schemes (Hobbs, 1983). This is a result of the long lead times in getting government schemes designed and approved, the reduction in irrigation subsidies on major schemes, and the rapid horticultural development.

Much of the land close to the Canterbury coast is that most sought after for horticulture. Water Resource Surveys (eg, North Canterbury Catchment Board and Regional Water Board, 1983) indicate that artesian wells can be drilled in most of these coastal areas which have high potential for horticulture. The close proximity of the water table to the surface indicates that well drilling costs are not likely to be prohibitive. Thus, in the short term, neither water supply nor its cost appear to be the limiting factor in these areas.

Irrigation development, whether obtained from surface waters or from groundwater sources, may have a 'downstream' effect on the quality of aquifers used for water supply, forcing accelerated development of expensive water supply schemes in these areas. The Central Plains Scheme, proposed to be developed predominantly on free draining stony soils with low moisture retention capacity, could exacerbate drainage problems experienced on the higher quality soils of Leeston and other low-lying areas

adjoining the Lake Ellesmere basin (North Canterbury Catchment Board, 1983, p 231-232). The Waiiau community irrigation scheme has already encountered problems of raised water tables in some downcatchment areas, as a result of poor drainage of irrigation water.

Some horticultural crops are particularly sensitive to waterlogging. If excess water is applied to these crops this can result in increased disease problems and, where soils are heavy or land drainage is poor, resulting water logging can result in physiological and disease problems with some crops. Stonefruit trees, for example, are very sensitive to lack of soil oxygen which is a common result of a raised water table. Such effects can ruin a crop or orchard, raise production costs or reduce yields (Hughes, 1983).

Rowe (1983) takes an optimistic view of the implications of large scale irrigation development for horticulture. He claims:

'Whenever irrigation has been introduced throughout the world it inevitably leads to more intensive agricultural land use, of which horticultural crops are important ... Economic and social pressure, which the availability of irrigation creates, will ensure this happens.'

In other words, changes in land ownership and land use, which in many respects are cultural or lifestyle changes as much as changes to more intensive management, can be precipitated or accelerated by irrigation development. Nevertheless, the case for large scale community irrigation scheme development as the primary agent of horticultural development in Canterbury has yet to be argued on its merits.

Market and product development, and shelterbelt planting may warrant higher priority and resources than they are currently given. Irrigation-led development of horticulture is essentially a production-led strategy, and as such out of step with the current market-led development paradigm.

(d) Labour and Management

The report of the Employment Advisory Group (Canterbury United Council 1983c) documented high unemployment throughout the Canterbury region. This was highest (4-6% of the workforce) in the Christchurch urban area, although still substantial (2-4%) in the rural areas. Department of Labour Statistics for the Christchurch Urban Area record 9385 registered unemployed as at January 1983, which is 6.3% of the 1976 Christchurch labour force.

If the recent Canterbury horticultural development trends discussed in section 3.2 continue, then this may create about 500 additional jobs in the Canterbury region by 1990. However, the Chairman of the Canterbury section of the New Zealand Fruitgrowers Federation predicted that that order of growth in area planted in fruit would be reached by 1986/87. This would clearly only make a modest contribution on its own to alleviating Canterbury unemployment. That situation would have to be reassessed if the rate of growth in Canterbury horticulture increased significantly, for example, as a result of a concerted Canterbury horticultural development programme.

Thus it would be tempting to assume that adequate Canterbury labour would be available to service a moderate increase in the area used for horticul-

tural production. This would make at least three assumptions which may not be realised:

- (1) that the present unemployed would prefer working for very low wages to continuing to draw an unemployment benefit;
- (2) that the need for transport to any prospective horticultural units would not seriously interfere with the availability of suitable labour;
- (3) that an adequate number of workers skilled in aspects of horticultural production and associated employment would be available.

A significant increase in horticultural production may result in employment of substantial numbers of unemployed Canterbury residents. This would then contribute to ameliorating a major Canterbury concern with the problems caused by unemployment in the region. The concentration of unemployed within the urban area suggests that, from the point of view of attacking unemployment, it would be most desirable to develop horticulture close to the urban area.

Social problems may follow from the creation of such a large class of lower paid, full-time, part-time and casual workers within the Canterbury region. Perhaps the emergence of a large 'horticultural labourer class' in Canterbury would exacerbate social tensions within the region. However, it could hardly be less damaging than failing to provide employment for those who need and desire it.

Another employment scenario would be that an expanded horticultural sector would draw substantial numbers of itinerant workers into the Christchurch region.

The level of skill of the prospective horticultural developer or his land manager are both likely to have an important bearing on the business prospects of future horticultural ventures. Innovation, enterprise and enthusiasm, as well as good managerial skills, are all important catalysts for the success of horticultural enterprise. In fact, the level of expertise and enterprise of these key actors in the development process is probably the key to the overall success of horticultural development in any area. This suggests that a major development objective should be to foster entry into horticulture of those with the necessary qualities.

Canterbury is in a good position in view of the large number of research establishments in the region with skilled staff, and the steady flow of horticultural graduates from Lincoln College. However, new graduates may not have the experience and management skills necessary to initiate a successful new horticultural development. Moreover, new graduates are unlikely to be able to put up the capital required to develop a horticultural operation.

Existing pastoral or mixed cropping farmers are attuned to a much less intensive land and crop management system than is required for the efficient production and marketing of horticultural products of first class export quality. The entry of urban professionals and businessmen with little experience of horticulture, provides an opportunity for new ideas and management practices to be applied within the Canterbury horticultural sector.

Stokes (1983) loosely classifies some of the social groups involved in horticulture into local people;

who include existing orchardists, pastoral farmers and business or professional people; and newcomers, who include family groups, middle-aged couples, syndicates and alternative lifestylers. It would seem plausible to assume that there are significant differences in the style and impact of horticultural development ventures initiated by members of these different groups. This may have some bearing on horticultural development prospects.

(e) Finance

Generally capital is likely to be available if development of a horticultural industry proves itself to be a sufficiently promising investment for the Canterbury region. However, one limiting factor may be a lack of risk capital to carry out the early 'high-risk' phase of proving the profitability of a particular product development for the region.

Different groups of prospective horticulturalists do not have equal access to capital nor are they likely to make the same type of contribution to horticultural development overall. In the early stages of horticultural development, the innovative, enterprising (risk-taking) and energetic are most essential. This group would include some young horticultural graduates and young couples, neither group is, however, likely to have ready access to development capital. On the other hand, the syndicate or company is likely to have taxable profits in other operations against which the development costs of a horticultural venture can be written off. However, these groups are likely to be less risk-accepting, less innovative, and less able to give a developing property the careful and intensive management required, than would the

aforementioned capital-deficient group. Other possible participants with capital to contribute, would include the existing farmer, existing businessmen and urban professionals.

One remedy for both labour and finance problems is the promotion of sharefarming on horticultural properties. This represents some form of profit sharing arrangement whereby young, energetic and/or skilled staff can be brought onto the property. The deputy director of the property management service at Lincoln College recently commented that

"entering into a sharefarming arrangement, rather than employing a manager, encouraged initiative and directly rewarded the sharefarmer for the quantity and quality of his input" (Hughes, 1983).

3.5 Non-Production Factors

(a) Research and Product Development

MAF, DSIR and Trade and Industry all have large offices and staff stationed in the region. A number of large government research stations are based here. These include the Chemistry, Crop Research, Entomology and Plant Diseases Divisions of DSIR, the Winchmore Agricultural Research Station and Plant Health Laboratory of MAF, and the Ministry of Works Science Centre. Canterbury University and Lincoln College are also located in the region. Lincoln College is notable for its research and educational services to New Zealand agriculture, and has a number of horticultural research facilities, including a new experimental orchard currently under development. The region is thus well endowed with technical skills useful in horticultural development, though lacking a specific market research/marketing unit.

Some professionals employed by the various government research, teaching and advisory services, are taking their own personal initiatives to realise Canterbury horticultural development potential (for example, Dr Jackson of Lincoln College who is planting new grape varieties on his own property). It is not clear what product development work appropriate to the immediate needs of the Canterbury horticultural sector is being or has been carried out under the aegis of the various government or educational establishments in Canterbury. Nonetheless, it is true that the Government's new fruit crops scheme is a vehicle for new product development, and has sponsored trial plots of prunes, sour cherries and chestnuts. Irrigation development planning has received the highest priority in Canterbury, but the emphasis has been on large projects rather than more general irrigation development planning adapted to the needs of smaller scale horticultural development initiatives. As discussed in section 3.4(c), irrigation water availability as such is unlikely to be the key to accelerated development of horticulture in Canterbury.

Thus Canterbury would appear to have a large number of research facilities and skilled personnel who, if more resources were directed at the key areas of market and product development and if overall effort was better coordinated, could assist the development of Canterbury horticulture.

(b) Transportation

An important factor which constrains Canterbury horticultural development is the existing transport system, both internal and external, particularly by sea and air. The high cost of transport to North

Island markets constrains Canterbury's access to the major New Zealand domestic market, and also its access to overseas markets through Auckland. The coastal shipping service has improved with the beginning of a regular Lyttelton to Wellington service by the Pacific Shipping Company. The difficulty and cost of trans-shipment within New Zealand is a barrier which particularly inhibits joint shipment by North and South Island exporters to overseas markets (eg, of onions).

In a report on a number of New Zealand horticultural export marketing case studies, Rae and Bourke (1981) comment:

'For horticultural production, transport must coordinate effectively with the physical production of the product, compensating for the fragile and perishable nature of most product forms.'

In their discussion of a case study of the export of New Zealand onions they comment:

'Shipping problems out of ... Canterbury have contributed towards a decline in importance of (the region) ... as export suppliers (of onions).'

and with regard to potatoes:

'the lack of refrigerated ships was criticised by one exporter and the poor service from the Port of Lyttelton was said to be a major factor in the decline of Canterbury as an export potato region. Since 1980 the service from this port has improved and potato exports through Lyttelton have increased, reversing previous trends.'

The problem is one of having available the right amount of space in a ship going to the right over-

seas market when the horticultural crop is ready. Canterbury is not as important a port as Auckland and Wellington, and has thus been constrained by the lower frequency and flexibility of its sea shipping service. A similar problem prevails for air shipping of produce. Rae and Bourke (1981) comment:

'The North Island presently produces over 80% of the total (strawberry export) crop, after gradually increasing its share over time at the expense of South Island regions, especially Canterbury, which have reduced production to the level of demand in local markets.'

On the practical side they note a strategy sometimes used by Canterbury exporters:

'Some exports are also made out of Christchurch, flown either to Auckland or to Australia for trans-shipment. The exporters are required to make airline bookings three months in advance.'

The high cost of transport, difficulty of obtaining adequate cargo space and suitable transport, and unsatisfactory product handling and storage, are all negative factors which give Christchurch a marked handicap with respect to suppliers located in some North Island regions.

The road and rail transport system within the South Island, while expensive, is relatively flexible to producers' needs. However, in some cases cargo handling and transport time may not be satisfactory.

(c) Industry Organisation

Marketing, transportation, storage and processing are all initiatives which benefit from coordination and cooperation between growers.

Hayman (1981) remarked:

"... as a group, they [horticulturalists] have proportionately more statutory boards, producer federations and associations and committees than many larger industries."

It is perceived to be to the advantage of the grower to be attuned to market trends and to work together with other growers in order to present the most effective bargaining front and carry out effective marketing for an industry. The advantages of industry cooperation in marketing are illustrated by the success in the early 1970s of the voluntary New Zealand Kiwifruit Export Promotion Committee, which has since evolved into another successful marketing body, the statutory New Zealand Kiwifruit Authority.

The Horticultural Export Development Committee (Reg Dev News, 1981) recommended the establishment of regional horticultural committees to assist, especially with the development of transportation, storage, and processing facilities, in areas of new horticultural expansion. But what is probably needed in Canterbury is something more basic than this, some form of industry strategic development planning group, which would have the objective of coordinating product and market development, and communicating the results to the respective horticultural industries. Such an initiative could provide the base for accelerated growth in the Canterbury horticultural sector.

3.6 Conclusions

Growth in the existing stone, pip and berryfruit industries, but also in the newly established grape industry of the Canterbury region is indicated by statistics for the 1981 to 1983 period. Of the order of 30 jobs (direct and indirect) are likely to be created in the region as a result of that development over the period.

If these rates of growth continue, then they would result in about 1200 ha of additional fruit production in Canterbury by 1990, providing in the order of 500 full-time job equivalents (direct and indirect), a modest contribution to providing employment for the 13 776 people without full-time unsubsidised work in the Canterbury employment district in January 1983. The level of fruit orchard development projected would utilise about 1800 ha of the 20 750 ha with actual and 88 300 ha with potential value for the production of food (and thus generally adaptable to some form of horticulture) in the Canterbury region. This illustrates the scale of future horticultural development which might be expected from a continuation of recent rates of growth in Canterbury horticulture, but can in no way be regarded as a prediction of the most likely course of events. A deeper understanding of the internal and external factors which determine the rate of horticultural development in Canterbury, an analysis of how these factors (including those which are the subject of horticultural development planning initiatives) are likely to change over the prediction period would provide a firmer basis for predicting future Canterbury horticultural output.

The recent experience of horticultural development in Canterbury has resulted in some problems which suggest defects, either isolated or more general, in the process of Canterbury horticultural development planning.

Unless prevented in future, these may curtail or mar the success of future Canterbury horticultural development. The experience of the blackcurrant industry, revealed in wide variations in yield between individual properties and market and price failure following the boom in plantings, suggests inadequate site selection and crop management in some instances and insufficient product and market development planning in general. The experience of the Waiiau Plains community irrigation scheme, which resulted in waterlogging of some good soils in downcatchment areas, is a problem which could be experienced as a result of other proposed community irrigation schemes, and suggests that irrigation scheme planning procedures are not giving sufficient attention to management of undesirable environmental and economic impacts. The 'Meadow Mushrooms' farm odour problem, which resulted in widespread objections from members of the public living in the surrounding residential area, suggests inadequately applied planning guidelines for horticultural developments. That type of problem could probably be prevented by ensuring that 'factory farming' operations establish themselves outside of residential zones in future.

Identification of markets and corresponding products is still the key consideration for this stage of the development for Canterbury horticulture. Where products with under-utilised market potential exist, careful consideration needs to be given to determining the general site attributes which will determine land suitability for that crop. Site characteristics include; those relating to product yield and factor costs; ie, soil characteristics, drainage, climate (particularly the incidence of hail, frost and wind and the aspect), water and shelter availability, proximity to Christchurch (both a market and a source of labour), the airport and the Port of Lyttelton. Other site characteristics

relate to environmental management; including the likelihood of conflict with adjacent land uses (such as residential areas), and the possibility of adverse down-catchment impacts (such as pollution of aquifers, drainage problems and damage to aquatic ecosystems).

Although there appears to be ample land suited to horticulture in Canterbury, existing land ownership, zoning, and lifestyle patterns may inhibit its development.

Shelter and availability of irrigation water are site factors which are not likely to impose a fundamental limitation on the development of horticulture.

Availability of irrigation water does not appear to be a factor limiting the overall development of horticulture in Canterbury at this time. Irrigation development from either groundwater or surface water sources is likely to be available at economic cost in most areas which have soils suitable for horticultural development at this time. Nevertheless, large scale irrigation schemes could accelerate horticultural development in some areas by forcing more intensive use to be made of the land to service irrigation costs and by stimulating changes in land ownership, thus making lifestyle patterns in rural areas more flexible and land use changes thus more likely. However, the same objective might be achieved much more cheaply and quickly by encouraging subdivision to horticultural sized properties in areas deemed suitable for such development.

The off-site environmental impacts of irrigation of horticultural properties represent regional social costs which should be taken into account in the site choices made by prospective horticulturalists and in irrigation scheme design.

Horticultural development could make a contribution to reducing Canterbury unemployment. However, this would depend on the acceptability of the lifestyle and voca-

tion offered by employment in the horticultural sector. Rather than regarding labour as an input into the production process, it is more realistic to regard it as an important catalyst in the development of the sector. Attracting people with energy, enterprise and innovative ability into horticulture and providing these people with incentives to be competitive and forward-looking in a very competitive international environment, would assist successful development of the sector. Access to capital may be an important factor limiting access to the sector of those with energy and innovative ability, and another limiting factor could be paucity of capital for the early high-risk high-marketing cost incurred in the early phase of development of an industry. Sharefarming or profit sharing are a means of encouraging initiative in non-owner farm managers. As such, those incentives could help ensure the successful and competitive development of the Canterbury horticultural industries.

Canterbury appears to be well endowed with research establishments, educational facilities and skilled personnel. Efforts in the area of market research, marketing and product development are diffuse. If overall effort in this area was better coordinated this would be to the advantage of the Canterbury horticultural sector.

Transport services are an important constraint on the development of Canterbury horticultural industries. To compete effectively in terms of freight costs and product condition, Canterbury exporters need to be able to send their produce directly to the overseas buyer. Trans-shipment escalates costs, increases handling time, and can be disastrous for perishable horticultural products. Both air freight and refrigerated shipping services have been identified as warranting urgent improvement.

Canterbury horticulture is at a stage where it would probably benefit from some form of sectoral strategic planning group, responsible for focussing and disseminating the results of product and market development effort.

4. THE CURRENT ROLE OF REGIONAL PLANNING

4.1 Introduction

This chapter reviews the current regional planning efforts towards the development of horticulture in Canterbury. The Canterbury United Council has the major statutory role to play in this process but a large number of regional authorities and central government departments are involved in various aspects of associated regional resource planning.

This review of regional planning efforts considers both the political and procedural basis of planning, and its instrumental results (ie, analyses and reports). Planning is a mixture of politics and rational analysis and therefore both ingredients need to be appraised in appreciating the planning process. For example, Forester (1982) describes planning as encompassing both social/political networks and roles (ie, planning procedures), and sets of instrumental results (ie, plans, reports etc).

In plain language, the 'cognitive structure of the key actors' means the values, objectives, and perceptions of those in important parts of the policy-making process. The 'nature of the institutional environment' represents the organisations or groups involved in policy-making, their 'ethos' (essentially values and world view), objectives, responsibilities and powers in the policy-making process. The characteristics of the issues under investigation include 'hard' facts, resource potentials for example. But also referred to are systems of ownership, control, social relations and organisation associated with the use and management of resources.

This chapter is arranged in seven sections. The next (4.2) provides a short history and background to

present-day regional planning. Section 4.3 considers the statutory regional planning policy-making process in a narrower sense than described by O'Riordan (1976). It attempts to characterise the key participants in the regional planning process in terms of their experience and relationship with particular communities of interest, and describes the powers and responsibilities of the various organisations involved in the process. Section 4.4 is concerned more directly with the horticultural development issues under investigation and how these are treated in the policy-making process. Section 4.5 discusses non-statutory planning initiatives by the United Council. The role of other public agencies in regional resource planning is briefly discussed in section 4.6.

4.2 Background

New Zealand statutory district planning preceded regional planning and had its origins in the control of land use. The scope of matters dealt with by district planning, as a part of the administrative function of local government, has broadened much from those beginnings. The development of the New Zealand nation, which entailed growth in the range of services demanded by communities, a drive to improve public health and the need to provide amenities for citizens, stimulated this evolution of planning and local government. The political and administrative units of district planning proliferated without regard for economies of scale in the provision of services.

In parallel with this increase in complexity and growing lack of integration within local government, the control and servicing responsibilities of central government multiplied. The operating responsibilities of the various government departments assigned those responsibilities generally have a roughly 'regional' basis. However, the boundaries of these respective 'regional'

administrative units vary widely. The differences between the 'regional' boundaries adopted for various administrative purposes reflect in some measure the nature of the services offered by the respective departments. This fragmentation is believed to inhibit coordination between the various central government control and servicing functions, and exacerbates the problem of coordination with district planning.

The provision of services and infrastructure to cater for the growth of the major metropolitan areas required improved coordination between urban and adjacent rural districts. Successive modifications to planning legislation, especially the Town and Country Planning Act, resulted in greater emphasis being placed on the coordination of local government planning activities at the metropolitan and, later, the regional level. The evolving concept of a region came to include both rural and urban areas, and assume some functional, cultural or environmental affinity between the component parts.

The Local Government Act of 1974 made regional planning mandatory throughout the country. This Act aimed to:

'make better provision for the administration of those functions which can most effectively be carried out on a regional basis, and to make provision for the establishment of united councils, regional councils ...'

Nevertheless, the Act did not provide mechanisms by which regional planning could be carried out. It assigned the Local Government Commission the difficult task of setting appropriate boundaries for regional 'reorganisation schemes' throughout the country. The statutory criteria used for determining boundaries included some related to physical resource management, eg, water catchments or other physical features of the area; others relating to the provision of services and

utilities, eg, existing districts for administrative control of electricity and gas supplies within the region; and other administrative considerations, eg, the location of existing boundaries of local authorities.

In 1977, a revised Town and Country Planning Act was passed. It provided a process for regional planning and complemented the institutional arrangements for regional planning being put together under the provisions of the Local Government Act of 1974. The 1977 Act made provision for the process of regional planning scheme preparation by properly constituted regional planning authorities and identified their relationship with district schemes and the actions of central government. Briefly, local bodies of all kinds were given the right to appeal to the Planning Tribunal against regional schemes but final scheme approval was vested in the Minister of Works and Development, and central government. This corresponded closely with some of the recommendations of the Task Force on Social Planning (1976). Once any scheme is operative, the Crown 'must adhere' to and local bodies 'are bound' by it.

Subsequent legislation has given the Crown the option in certain circumstances of bypassing the Act and relying instead on the 'fast track planning' provisions of the National Development Act of 1979.

A 1979 Amendment to the Local Government Act gave the local authorities of the Canterbury region the choice of opting for a united council, rather than the alternative regional council form, but gave the electorates of the region no direct say in the matter. In May 1979 the Canterbury United Council was formed, taking over the responsibilities and programmes of the then existing Canterbury Regional Planning Authority, and possessing boundaries extended to the Conway River in the north.

An important consideration with regard to administrative regional boundaries is that these should be the same or very similar. Because the 'natural' boundaries for different purposes may be different, this would require some sacrifice and compromise. On the plus side, boundary rationalisation may stimulate cooperation between sectoral, departmental and organisational plans at a regional level. At the present time this desirable objective is far from achieved, and those moves being made to achieve it do not appear adequate.

The Canterbury 'region' is given a range of different boundaries by various government agencies. These differences may reflect in some measure the different responsibilities of these agencies. For example, the current Canterbury Regional Planning Scheme boundaries (as depicted in figure 3.1) differ markedly from the Canterbury statistical or the MAF regional boundaries. The Rakaia River forms the southern boundary of both the Canterbury regional planning and the regional water board areas. But the Rakaia water resource is of great interest to horticulturalists, as well as to other users, on both sides of its banks.

4.3 The Policy-Making Process

4.3.1 Legislation

Regional planning has a statutory basis in the Town and Country Planning Act 1977 and the Local Government Act of 1974 (hereafter referred to as the 'Planning Acts') and their amendments. Under the provisions of these Acts, the Canterbury United Council has been set up, given responsibility for 'regional planning', assigned

functions and powers, and obliged to adhere to those statutory procedures for regional planning. The Canterbury United Council is able to develop its own interpretation of the regional planning function within the constraints set by these Acts and their intent. Regulations passed by Order in Council under the regulatory powers set out in the Town and Country Planning Act 1977 are also used by the Government to fine tune the regional planning process.

Regional planning as provided for under the Planning Acts has a special meaning. Namely, that process which:

- (1) has regard to the matters of national importance referred to in the 1977 Act, section 3(1);
- (2) carries out the purpose of regional planning as set out in the 1977 Act, sections 4(1) and 4(3);
- (3) uses those institutional arrangements set out in the Acts;
- (4) carries out the various functions set out under the 1974 Act and sections 5, 9 and 10 of the 1977 Act;
- (5) uses the powers set out in the Planning Acts;
- (6) adheres to the procedures as set out in these Acts, particularly sections 11-28 and part III of the 1977 Act.

4.3.2 The Normative Basis of Regional Planning

The planning legislation includes normative principles (ie, values, goals and issues) which are likely to be of relevance to horticultural development planning. For example, the current 1977 Act has the broad general purpose (section 4) of 'wise use and management of the resources' and 'the direction and control of the development of a region', in such a way as will 'most

effectively promote and safeguard the welfare of the people and the amenities of the area'. Moreover, the 1977 Act requires that in the preparation of regional planning schemes, 'regard shall be had to the principles and objectives of the Soil Conservation and Rivers Control Act 1941 and the Water and Soil Conservation Act 1967'. These are very ambitious and wide ranging purposes.

Of particular relevance to horticultural development planning are the 'matters of national importance'. These give a lot of emphasis to control functions obviously intended to protect land with high actual or potential value for food production from urban development (amongst other possible objectives). The broad principles set out are:

'The conservation, protection and enhancement of the physical, cultural and social environment.' (3a)

and

'The wise use and management of New Zealand's resources.' (3b)

Clauses 3c to 3f I interpret as qualifying and elaborating on 3a and 3b above. Of relevance to this study is (3d), ie,

'The avoidance of urban development on, and the protection of, land having a high actual or potential value for the production of food.'

This last provision contains the implied assumption that land with potential value for food production should be safeguarded from urban development. If this principle is followed too rigidly it might have unwarranted economic, social or environmental consequences. For example, land not being used for food production could be 'locked up' from other higher value uses.

But of particular interest is section (3e):

'The prevention of sporadic subdivision and urban development in rural areas.'

This sort of policy could have undesirable side effects in an economy striving to intensify and diversify agricultural production (which usually requires subdivision of large titles more suited to less intensive land units and less capital intensive land use), a rural sector becoming concerned with loss of population (and services), new intensive land uses requiring more labour and thus more intensive rural settlement (more houses and suitable sections), an urban population seeking new lifestyle opportunities (e.g. rural arts and crafts with perhaps some part-time farm labouring), and unemployed who may relish the opportunity to escape the urban areas. Is our rural land resource so effectively and efficiently used at this time that public policy is justified in shutting out further residential settlement in rural areas? Does the extra cost of providing services for additional rural population (assuming that the service requirements and costs are in fact higher) justify foregoing other social and economic benefits of more intensive rural settlement?

In the previous chapter, land use and lifestyle change were recognised as necessary accompaniments of horticultural development. Rowe (1983) was quoted as noting that irrigation scheme development was recognised as a means of accelerating changes in land ownership and hence in land use and lifestyle, thus leading to increased horticultural development within the irrigated areas. If section 3(e) of the Town and Country Planning Act is implemented as stated in the Act, it may discourage subdivision of large pastoral or mixed cropping farms and thus slow down horticultural development. This situation may be especially relevant in Canterbury.

If the number of horticultural unit size properties on the market is restricted then, this could drive up the market price of that land type and inhibit new investment in horticultural development.

The policies for protecting rural land from more intensive settlement may be sensible in some instances but in others interfere with important policies, eg, the encouragement of more intensive use of high quality soils. Therefore such policies should be shaped to suit local circumstances and adapted as those circumstances and priorities change over time.

These 'purposes' and 'matters of national importance' for regional, maritime and district planning reveal the origins of planning in the control of land use in a pastoral economy, but may not adequately reflect the realities of the modern New Zealand economy which is struggling to intensify and diversify land use.

4.3.3 The Policy-Making Procedure

Regional planning, as defined under the Planning Acts, is a policy formulation process expressed through, but not limited to, the 'regional planning scheme'. The process of regional planning allows it to advise or make recommendations to other authorities operating at the regional, national or district levels where this is necessary to fulfill the objectives and policies of the regional planning scheme (eg, 1977 Act, sections 10(a), (b), (c) and (d)).

The regional planning scheme preparation procedure is the major focus for regional planning. Features of the regional planning scheme review process are illustrated in figure 4.1. Regional planning scheme sections proceed through a sequence of different stages in the process of becoming 'operative'. Initially the public is notified that they are being prepared (or reviewed) and

TOWN AND COUNTRY PLANNING ACT 1977

STEPS IN REVIEW OF REGIONAL PLANNING SCHEME

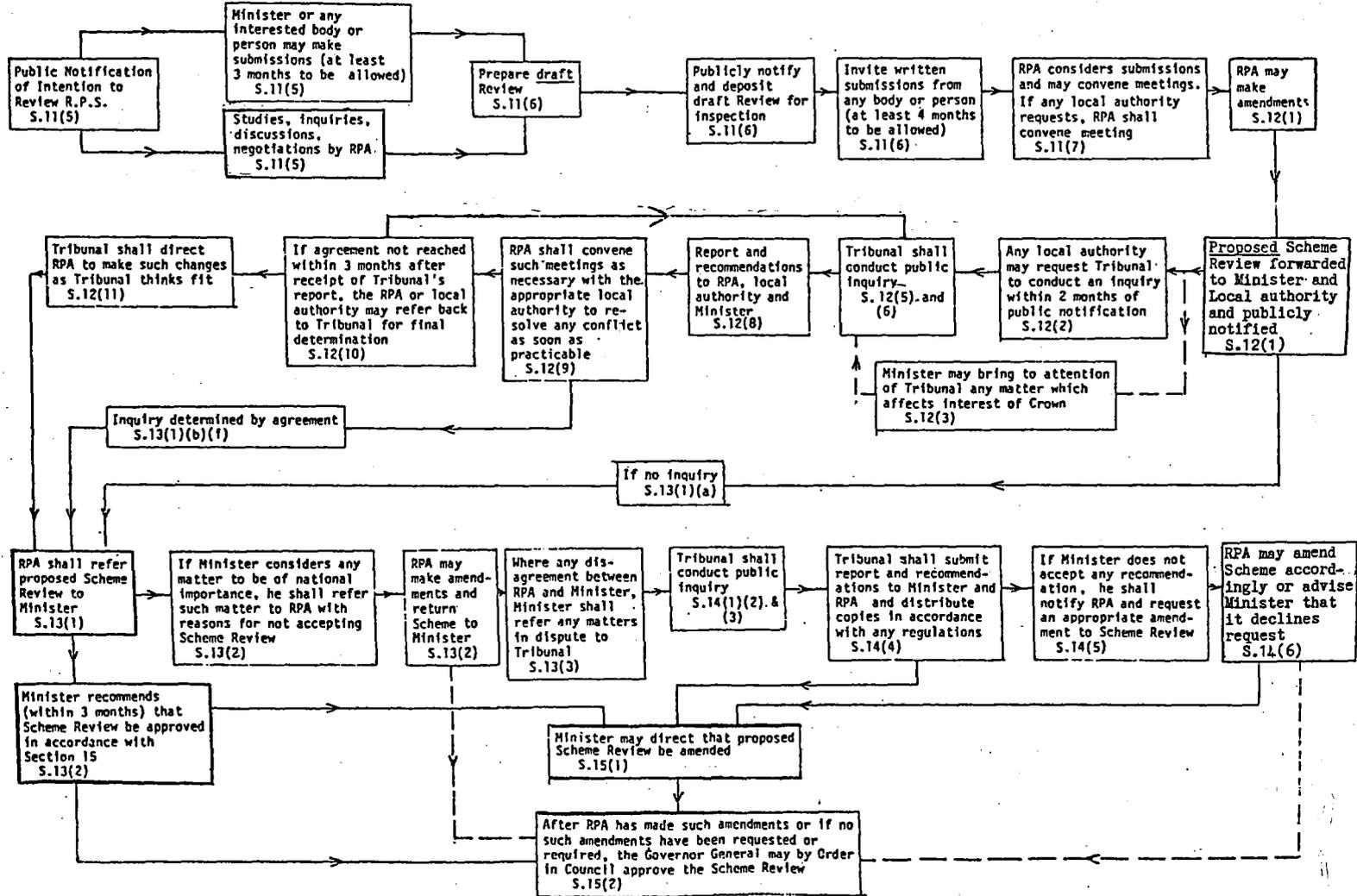


Figure 4.1 Features of the Regional Planning Scheme Review process

urged to make submissions upon those matters of policy which are to be dealt with in the section. At the next stage a draft of the scheme is made available for inspection and submissions are invited. A proposed scheme is then prepared and, after proceeding through various statutory appeal processes and undergoing any required amendments, the scheme may be approved by Order in Council and then becomes operative. The regional scheme sections proposed, drafted or notified to date are listed in table 4.1. Section three of this scheme proposes to deal with regional development (until early 1984 this was to be dealt with in two sections, one dealing with rural resources and the other with regional economic development, but these are now to be combined). This scheme section has been notified and has yet to reach a draft form. It would be expected to deal with horticultural and other economic development issues as part of an overall regional development strategy.

What rights do various governmental and community interests have within the regional planning scheme preparation process? The Crown, represented by the Minister of Works and Development, will have a direct and powerful influence on the policy formulation process under the provisions of sections 12(3) and 13(2) of the 1977 Act (see figure 4.1). This allows the Crown to direct that a proposed scheme or any provision of it be amended, modified, or deleted. However, the Crown direction must relate specifically to the 'interest' of the Crown or those 'matters of national importance' outlined in section 3 of the 1977 Act. The Minister of Works and Development can also hold up the regional scheme preparation process when a scheme is referred to him by delaying approval for a proposed scheme.

TABLE 4.1: CANTERBURY REGIONAL PLANNING SCHEME SECTIONS
(TO DATE)

Section Number	Title	Status
1	Settlement distribution	Proposed (June 1980)
2	Communications	Proposed
3	Regional development) Rural Resources	Notified
) Regional Economic	Notified
) Development	

All local authorities have the right to request an inquiry by the Planning Tribunal into any proposed regional planning scheme section. All parties, public and private interests, including any individual, organisation, quango or private company, are permitted to make written submissions on any notified or draft scheme. But members of the public have no statutory right to request an inquiry at any stage of the regional planning scheme preparation process.

Section 147 of the 1977 Act allows the Planning Tribunal the discretion to award costs against objectors, and thus provides some disincentive to outright obstructionism.

The absence of any direct means by which members of the public or private organisations may object to a proposed or approved scheme appears significant. It suggests that the involvement of the private sector and members of the public in the decision making process is peripheral to other objectives - such as reaching consensus between the goals of central and local government. However, the public can use lobbying and other political means to solicit central or local government representation of their particular objections to a proposed scheme.

What institutional arrangements manage the 'in-house' regional planning scheme formulation process? The 1977 Act specifies certain institutions, the details of their composition, means of formation, and operating procedures. The Canterbury United Council and the Canterbury Regional Planning Committee are both mandatory bodies, under the 1977 Act. The united council form differs from that of the regional council in a number of respects. Of particular significance are the differences in the provisions for council membership and finance.

United council members are appointed by the constituent territorial local authorities and other local bodies, whereas members of a regional council are directly elected by the electorate of the region. Members of either form of council are required to make a declaration, set out in the fourth schedule of the 1977 Act, pledging impartiality in the exercise of their powers and responsibilities.

United councils are financed by levies on their constituent territorial local authorities. The proportion contributed by each such authority is determined by statute but the total sum of the levy is decided by the council membership. In contrast, regional councils have rating authority which is theoretically independent of the desires or rating demands of the constituent territorial local authorities.

The united council itself clearly plays the controlling role in scheme preparation. It determines which issues get investigated by its allocation of staff and resources, by the commissioning of committees, and by political representations to central and local government. However, a network of committees and advisory groups play an important role in the nuts and bolts of this process.

The permanent committees convened by the Canterbury United Council are, as at December 1983, shown in table 4.2. The importance of metropolitan development issues to Canterbury United Council regional planning is clear from the titles of these permanent committees. However, the rural nature of much of the Canterbury region, the importance of the rural areas to Canterbury social and economic development, and the current debate over rural resource development options are not obviously reflected in the titles of any permanent committee. For example, although the 1977 Act makes provision for the establishment of a Land Resource Advisory Committee, no such committee had been set up, nor had any committee been convened to consider water resource issues (eg, irrigation) associated with rural resource development.

Table 4.2: Canterbury United Council committee structure

1. Canterbury United Council (mandatory)
26 members elected by the constituent local authorities.
2. Regional Planning Committee (mandatory)
 - Voting members
 - 26 United Council members (at least 3 required under the 1974 Act)
 - 1 Ministry of Works and Development (mandatory Crown representative)
 - 1 Catchment Board representative (mandatory)
 - Non-voting members
 - 1 Lyttleton Harbour representative (mandatory as representative of the Maritime Planning Authority)
 - 1 Federated Farmers representative (non-mandatory)
 - 1 Christchurch Drainage Board representative (non-mandatory)
3. Policy and Resources Committee
Fulfils a range of functions including structural changes to the Regional plan, lobbying, management of the Canterbury Resources Centre and costing of United Council activities.
4. Technical Liaison Committee
Brings together the officers from local authorities (e.g. planning officers, engineers or clerks), Ministry of Works and Development, Lands and Survey, Hospital Board, North Canterbury Catchment Board and the Transport Board.
5. Civil Defence Committee (mandatory)
6. Emergency Committee
Small; for giving provisional authority where quick decisions have to be made at short notice.
7. Urban Transport (mandatory, under Urban Transport Act)
8. Urban Transport Technical Committee (non-mandatory)
9. Summit Road Advisory Committee
Administers the Summit Road Protection Act.
10. Air Pollution Committee
A special committee which administers the Clean Air Zone under the Clean Air Act.

Note: The Canterbury United Council also creates temporary subcommittees and advisory groups for special tasks.

The titles or membership of the various permanent committees do not demonstrate any special concern with agricultural or horticultural development of the region. An exception is the inclusion of a representative of Federated Farmers on the Regional Planning Committee. The Policy and Resources Committee will be involved in general planning issues, including those of significance to the rural sector. The Technical Liaison Committee advises on various matters, including infrastructural, economic, social and environmental issues associated with regional planning, and links the united council with the technical skills and resources of local and central government.

As part of the process of preparation of the 'regional development' section of the regional planning scheme, the united council has convened various advisory groups (table 4.3). In 1981, as an early step in their planning process, the council convened a seminar on regional economic development. Table 4.4 lists the various studies contributing towards the 'regional development strategy' section of the regional planning scheme. These studies were prepared by the advisory groups, by the council's staff, by outside consultants, or by government departments on behalf of the council.

The composition of each advisory group reviewing any subset of the regional development issues gives some indication of the authority of the resulting findings. For example, the Farming Advisory Group (table 4.3) includes individuals with skills and experience in many facets of the Canterbury agricultural sector. The membership of the Employment Advisory Group includes many of those concerned with unemployment in the region but lacks those members of the business community who might be expected to have first hand experience of the problems of creating employment.

Table 4.3: Some Advisory Groups convened by the Canterbury United Council to carry out studies for Section 3 of the Regional Planning Scheme, 'Regional Development Strategy'.

* Forestry

* Secondary Industry

* Farming Advisory Group

Composition:

- a former Director of the Rural Bank
- an executive of a horticultural marketing cooperative
- MAF staff (2)
- member of Federated Farmers
- Regional Planning Committee member
- member of Lincoln College staff
- Water and Soil Division, MOW, staff (1)
- executive of a large food processing and marketing company

* Employment Advisory Group

Composition included staff from or members of:

- Employment Promotion Office, Christchurch City Council
- Canterbury Trades Council
- Canterbury United Council (staff)
- Christchurch Polytechnic (staff)
- Sociology Department, University of Canterbury
- Department of Labour, Christchurch
- Christchurch Unemployment Collective
- Riccarton Borough Council/National Advisory Council on Women
- Cooperative Enterprise Loan Trust/Department of Statistics
- Canterbury Employers Association

The united council form in particular provides an institutional structure for reconciling the policies of central government with the aspirations of local authorities. The united council planning process is a consensus-forming activity. It forces the national and local levels to communicate effectively, because the regional plan being produced binds local authorities and central government must adhere to it. However, the territorial local authorities dominate the united council and therefore the in-house regional policy formulation process. The Crown (through the Minister of Works and Development) has considerable influence over the form of the final scheme. The public at large is given negligible formal rights of participation in this process, and this must undermine the confidence of the people of the region in the United Council and the regional planning procedure.

4.4 Regional Planning Analyses and Policies

4.4.1 Introduction

As discussed in section 4.3.1 of this chapter, section 4 of the Town and Country Planning Act of 1977 is a statement of 'purpose' of regional planning, and outlines some goals for regional planning. Section 3 of the Act (the 'matters of national importance') specifies values and particular issues for planning, while the First Schedule of the Act defines the 'scope' of regional planning schemes. These parts of the 1977 Act are thus guidelines for the regional planning schemes of all regional authorities.

The first two sections of the Canterbury Regional Planning Scheme, the 'settlement distribution' and 'communications' sections, have already reached the 'proposed' stage of the statutory planning procedure. Section three of the scheme proposes to deal with a

'regional development strategy', a decision that was reached after this subject had already been notified in terms of two separate sections, one of which (ex-section three) was to have been on 'rural resources' and the other (ex-section four) on 'regional economic development'. Although the 'regional development strategy' section has yet to be released in formal 'draft' form, the associated planning programme is almost complete and a succession of reports on the matters it proposes to deal with are available.

4.4.2 Proposed Scheme Section One: Settlement Distribution

This scheme section identifies 'overall objectives' intended to apply to the regional planning scheme as a whole. These are general and cover a range of global social, economic and environmental principles which would be relevant to development of any kind. They reflect the values, concerns and scope of regional planning set out in the 1977 Act. Indicative of the general tenor of the objectives are the following:

- 'Agriculture : to protect land with high actual or potential value for food production from development likely to prejudice its long term use for agriculture and promote the wise use and management of this resource' (objective 7.4b) and;
- 'Economic growth: to encourage the growth and balanced distribution of productive activities and employment opportunities at appropriate locations throughout the region' (objective 7.41).'

The 'economic growth' objective is interesting because it explicitly links productive activities with employment and intimates that there is some appropriate spatial distribution of economic activity. If this

objective is applied broadly it would provide the basis for a rational approach to horticultural development planning. But it would require study to explore the links between horticultural location, land use potential, water resource use, transport costs, externalities (eg, groundwater pollution), and horticultural economics.

Specific objectives for 'settlement distribution' in the region are developed from the overall scheme objectives. To implement 'settlement distribution' policies, the Canterbury region is divided into a number of different planning zones, including urban growth areas, special development control areas, rural areas, and green belt areas. Zone and location specific objectives and policies are also stated. The 'green belt' area is a large zone surrounding Christchurch city, including the Port Hills area close to Christchurch, extending south to Tai Tapu and Lincoln, west to Rolleston and north to the Ashley River. This area includes much of the land with the highest potential for horticultural development. One of the policies for the green belt area is

"The creation of additional lots should be prevented except where necessary to improve the utilisation of the land for the purposes of agriculture ..."

The policies also suggest tight controls on the erection of additional dwellings in the area.

The objectives for the rural area are less detailed and stringent, and include:

"to maintain the intensity of settlement characteristic of rural areas' (13.2(f)).

Does this mean that rural subdivision would be discouraged?

A case study prepared for the OECD (Ministry of Agriculture and Fisheries, 1977a) looked at peri-urban agriculture in Papanui County, Canterbury. However, that study focussed on the numbers of dwellings in the area and the social profile of landowners rather than on the role of rural subdivision in stimulating horticultural development per se.

To gauge the effect of these policies it would be necessary to look closely at existing district scheme policies in these areas, carry out a study of demand for rural small holdings, of recent rural subdivisions and horticultural developments in the area. The social forces behind these patterns would also need to be studied.

4.4.3 Proposed Scheme Section Two: Communications

This sets out objectives and policies for the maintenance and development of the region's transport network. Because the profitability of the horticultural sector is sensitive to the cost and reliability of freighting systems, the objectives and policies developed for this scheme section may have a marked effect on horticultural development prospects. Section 15 of the scheme section states objectives and policies for air, sea and rail transport. These objectives include:

'To provide safe, efficient and convenient access for traffic associated with passengers, freight, employees and services for:

- (i) the airport;
- (ii) the port of Lyttelton; and
- (iii) rail facilities.'

and the policies are:

'The accessibility of air, sea and rail facilities should be given a high priority in traffic and land use planning' and

'The following future needs of our sea and rail transport should be protected:

- (i) airport runway extensions;
- (ii) port extensions;
- (iii) the Sockburn/Styx railway route.'

These objectives are not related specifically to the needs of any productive sector such as horticulture. Horticulture may seek special provisions to assure the air freight of perishable horticultural export products. However, it would be unrealistic to expect these very specific and specialist issues to have been given special consideration at that early stage of the regional planning process.

4.4.4 Notified Scheme Section Three: Regional Development Strategy

(a) Overall Planning Programme

The Canterbury United Council's intended 'regional development strategy' section of the regional scheme started out as two sections, one of which was to deal with 'rural resources' and the other with 'regional economic development'. The section will contain policies for the management and conservation of natural resources and the promotion of economic development and employment (Canterbury United Council, 1984 d). The Canterbury United Council's overall programme for preparation of this draft scheme section is illustrated in Figure 4.3. The work programme on the 'regional economic development' aspect of the 'strategy' has proceeded in two phases which will be discussed separately. Table 4.4 lists many of the reports prepared as part of that work programme.

Figure 4.2 Main Stages in Preparing Scheme Section Three:
Regional Development Strategy

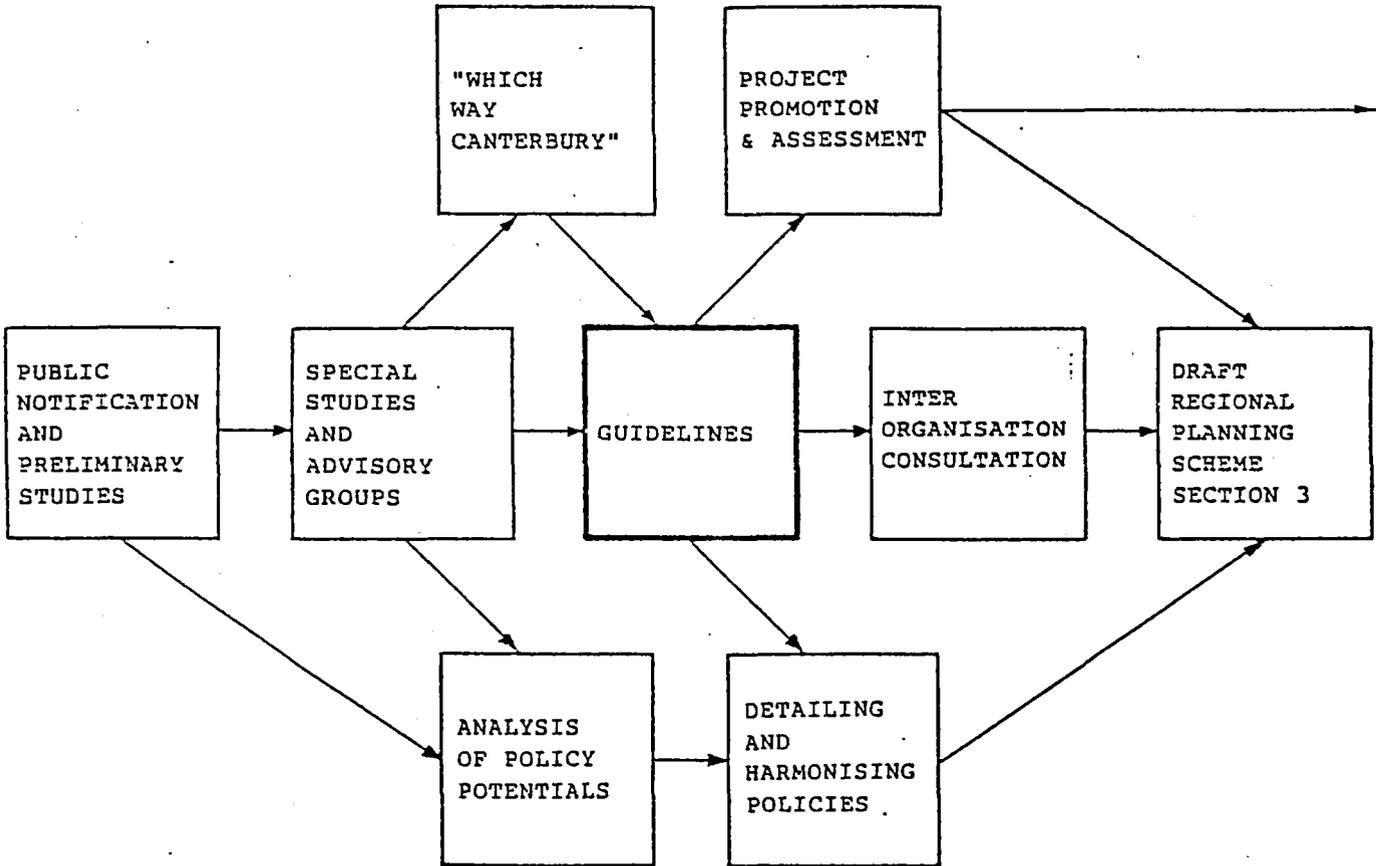


Table 4.4: Reports commissioned by the Canterbury United Council in the preparation of Regional Planning Scheme Section 3: 'Regional Development Strategy'

Canterbury Regional Economic Development Study: Stage One Report, C.U.C., Report No. 275a, November 1981

The Rakaia and Central Plains Water Allocation Management Plan - An outline of Regional Planning Issues, C.U.C., February 1983

Farming Development in the Canterbury Region, C.U.C. Report No. 285, May 1983.

Forestry Development in the Canterbury Region, C.U.C. Report No. 280,

Natural Resources of the Canterbury Region: a Survey and Evaluation for Management, M.O.W.D., 1983.

Facing the Facts: Employment and Canterbury's Future, C.U.C., 1983c.

Which Way Canterbury? A Regional Planning Discussion on Natural Resources and Economic Development, C.U.C., August 1983.

Other studies include:

- * An advisory group study on secondary industry;
- * In-house studies on Fishing, Mining and Quarrying and Transport;
- * a consultant's study on Energy;
- * and a study on Informal Recreation prepared in consultation with recreational groups.

(b) Regional Economic Development Study - Stage One

This was initiated early in 1980 and co-ordinated by the Council's Regional Planning Committee. A seminar on Canterbury Regional Economic Development was held in early 1981 and a number of specialist planning studies for the study were presented there.

Ministry of Works and Development, for example, commissioned McDermott Associates to prepare a discussion paper on development directions for the Canterbury region as a contribution to the Stage One Study. In his report, McDermott (1981) commented:

'Promotion of regional agriculture (is needed), building upon the particular climatic, topographical, hydrographical and soil advantages of the Canterbury plains. A systematic and comprehensive approach to land utilisation is called for which links physical potential with social and cultural conditions, including settlement, processing and marketing opportunities and constraints.'

McDermott suggested two distinctive directions for further regional initiatives: social planning, calling for sensitivity to variations in social conditions within the urban area; and economic planning, which could usefully seek to explore the real potential of the land resource around Canterbury. The direct production potential and prospects for servicing this from Christchurch could be considered.

The Stage One Study was a joint exercise involving Ministry of Works and Development and United Council staff. Its final report was presented to the Canterbury United Council in late 1981. A conclusion of that report was that traditional farming activities, horticulture, primary processing (especially meat and wool) and tourism offered bright prospects for economic growth and the creation of jobs.

(c) Regional Economic Development Study - Stage Two

The final report of the Stage One phase of the Study recommended that Stage Two should pursue both regional economic and social planning initiatives. It also suggested that the Council seek the involvement of expert and interest groups in the community to assist with the various studies in these complementary work areas. The basic steps proposed for the work programme were:

- (i) preparation of objectives for regional economic development and employment
- (ii) identification of resource potential for development, growth opportunities and constraints on development in both urban and rural sectors of the economy
- (iii) identify and evaluate 'policy options' for regional development and determine priorities (major discussion document)
- (iv) preparation of more detailed measures, including a section of the Regional Planning Scheme.

The United Council then publicly 'notified' and asked for submissions on the 'regional economic development' part of scheme section 3, the 'rural resources' section having already been notified submissions received and considered. Submissions on the 'regional economic development' section were in the main from local councils and community interest groups. Thirty-three written submissions were received, only one of which was from a private individual. However, some of the community organisations represented large constituencies.

Horticulture was a popular subject, referred to in 15 of the 33 submissions, more than any other particular subject. Irrigation schemes large and small, surface or groundwater supplied, publicly or privately funded, were subjects about which many expressed an opinion. The various opinions reflected the individual economic interests and backgrounds of their authors.

The most consistent theme was for a rational approach to irrigation planning and development, which looked at the full range of irrigation types and options and considered their full benefits and impacts. There was some dissatisfaction that government monies might be made available for large community surface-water supplied irrigation schemes while the cost of private groundwater based irrigation development initiatives was borne by the user. Objections to land subdivision policies for rural land were also stated.

Opinion in the submissions was polarised over particular issues, for example the appropriate use and management of the region's water resources. The different shades of opinion represented competing existing or prospective users amongst others. There seemed to be general agreement about the need to use available resources to stimulate economic growth and employment. Horticulture was widely quoted as one of the ingredients of a strategy to achieve those objectives. However, there was wide difference of opinion on the appropriate means for achieving those objectives. The middle ground was that development of both groundwater and surface water resources needed to be evaluated as a part of a strategy. Because of the competing demands for the water resource, it was not regarded as unlimited. Borderdyke irrigation was considered by many submissions to be a wasteful use of that water resource. A synthesis of the suggestions on horticultural development would be that there is a need for a rational approach to horticultural development, which considers jointly the various land, water and other production factors. This was essentially the view expressed by the Hurunui County Council submission and elements of it are echoed in most other submissions dealing with the subject.

After receiving these submissions, the United Council prepared a set of overall objectives for its 'regional

development strategy' section. They were planned to supplement and later supersede the overall objectives already proposed in the Settlement Distribution section. They are in effect a very comprehensive and clear exposition of the values the Council envisages determining the 'Regional Development Strategy'. However, they are of little use in themselves in assisting with the task of preparing a horticultural development strategy for the region.

(d) Special Studies for the Regional Development Strategy Section

(i) The Rakaia and Central Plains Water Allocation Management Plan - An Outline of Planning Issues

The report was prepared at the request of the North Canterbury Catchment Board to assist the Board with the preparation of a management plan for the Rakaia River. It outlined what it saw as the major regional planning issues in connection with the Rakaia River Resource Report. The United Council report states that regional planning studies have been timed to coincide with the studies and procedures being undertaken by the North Canterbury Catchment Board and a regional planning discussion document would be published to coincide with the Draft Rakaia Water Allocation and Management Plan. The report comments that the Leathers et al (1982) study of research priorities for Lower Rakaia and Central Plains Irrigation Planning had been particularly useful in identifying social and economic impacts of irrigation development and clarifying regional planning concerns.

(ii) Farming Development in the Canterbury Region

An advisory group was convened to prepare this report for the Canterbury United Council. The group's brief was to examine growth potential

for the farming sector, identify necessary economic conditions and existing constraints to the sector, to establish realistic sectoral goals, and to establish any need for additional information and feasibility studies relating to these goals (Canterbury United Council, 1983b). The report comments:

'The region is on the brink of significant horticultural development as the [groundwater] resource is being used and shelter established.'

The information on the horticultural sector presented in the group's report is primarily descriptive; no estimate of the present economic significance of horticulture in the region is made and, although the areas currently devoted to horticultural production are identified, the identification of those areas with future potential is not carried out. The 'farming development strategy' proposed in the report is based on an estimate of the potentials for increased pastoral and arable farming output, but not on economic criteria or market intelligence.

Despite these shortcomings, the report cites a number of constraints to horticultural development, including a need for shelter belt planting, lack of expertise of potential growers, the need for irrigation, the effects of climate (wind, water deficit, frost, hail) and lack of assurance about future markets and prices. It identifies some bright prospects for horticultural export crops, and recommends, amongst other things, that the United Council should:

1. promote the intensification and diversification of farming in the region;
2. press the government to ensure that adequate finances are made available for irrigation and associated development;

3. suggest and promote the future establishment of shelter belts as these are essential to the intensification of agriculture;
4. call on the government and private industry to increase its efforts in the identification and development of overseas markets for New Zealand produce. More professional expertise should be developed by increasing the funding of research programmes and market investigations and there should be greater local involvement in decision making at the national level.
5. Ensure that infrastructure, transport, processing and other support services are maintained and/or provided at an adequate and competitive level. Particular attention should be paid to facilities and services provided at Christchurch International Airport and the port of Lyttleton.

To summarise, the discussion of horticulture, its potential, existing constraints and development dynamics in the report is superficial. The report does not provide a basis on which a sensitive and effective horticultural development strategy for the region can be formulated. It recommends that more effort is channelled into product development and market research.

(iii) Facing the Facts: Employment and Canterbury's Future

The report of the Employment Advisory Group (Canterbury United Council, 1983c) refines the Council's knowledge of the employment 'gap' in Canterbury and projects the sobering prospect of continuing high unemployment in the region.

This is identified as a major regional social problem and looked at from a number of perspectives. One of the measures suggested is promotion of labour-intensive industries, including horticulture.

The report could usefully have taken its analysis further. It could have identified the salient characteristics of those currently unemployed, their employment aspirations, and the sorts of compromises they would be prepared to accept, assuming they sought and were offered the prospect of employment. If one of the major objectives of horticultural development is the relief of unemployment in the region, then it would be useful to know something about the unemployed population's attitude to working in the horticultural sector. Would unemployed people include sufficient people with attitudes and skills appropriate to the needs of the horticultural sector? Would itinerant workers from outside the region or labour from other sectors of the regional economy be required or attracted to the horticultural sector? These questions are very specific, and assume a detailed knowledge of the labour market and the requirements of the horticultural industry. Nevertheless, it would be useful to give semi-quantitative, or at least qualitative, consideration of these questions if horticulture was expected to become a sufficiently rapidly growing sector of the regional economy.

(iv) 'Forestry Development in the Canterbury Region'

The forestry advisory group's report (Canterbury United Council, 1982c) points out that current research suggests that from an economic viewpoint the optimal shelter ratio for pastoral and arable land is about 3% of the land area. At present the actual shelter belt area is probably about 1% which suggests a need to encourage more shelter

belt planting. The report recommends that government review incentives, taxation and educational programmes for the establishment and management of farm forestry and shelter. The work by Sturrock (1975) dramatically illustrates the importance of shelter in the Canterbury region (discussed in more detail in section 3.4c).

(v) Natural Resources of the Canterbury Region: a survey and evaluation for management

At the request of the Canterbury United Council, the Ministry of Works and Development, Environmental Design Section, prepared this report on the natural resources of the Canterbury region (Ministry of Works and Development, 1983). It is a very comprehensive study and provides much information which could be used if a rational and systematic approach to land utilisation was to be carried out as a step in regional development planning. It could greatly assist in the identification of those development controls which may be appropriate to protect important amenities of the region from uncontrolled development.

(vi) 'Which Way Canterbury: a regional planning discussion on natural resources and economic development'

This report represented the culmination of the public consultative phase of Stage Two of the preparation of a 'Regional Development Strategy' section for the Regional Planning Scheme. It was prepared to stimulate dialogue between the United Council, the people in the region and other government agencies or departments. It synthesised the principal findings of the studies already discussed and a number of other studies, and outlined certain general policy issues for public comment. The combinations of two contrasting roles for government and

two divergent sets of values as the basis for development, gave four alternative Canterbury futures. The features of these futures were outlined in simplistic terms. These represented different regional development strategies with different social, economic and environmental implications. These examples were intended to indicate choices related to the level of use of natural resources and protection of the environment, and the level of public interaction in the economy. The report (Canterbury United Council, 1983d) observes:

'... farming plays a key role in the regional economy and has the potential to make a significant contribution to future development ... A range of crops could be grown but sophisticated marketing skills would be necessary ... Full employment should be the principal aim of any regional economic development strategy. The provision of information and incentives should be used to encourage new economic activities such as horticulture ...'

Thus the Canterbury United Council reaffirms the conclusions of its earlier work identifying horticultural development as a regional development goal in the interests of economic growth and employment creation.

A major criticism of the report is that it appears to focus its attention on matters over which it has little direct control, namely the values of the community and the role of government in the economy and society. It could have identified the major resource development and social choices to be faced by the people of Canterbury over the short to medium term. Some of the implications of these choices could have been explained in simple terms so that

citizens would be in the position to make their own informed comment on these decisions. For example, the region is faced with particular problems, e.g. unemployment, low rates of economic growth, and increasing competition for the use of limited resources (e.g. water, capital). Options for addressing some of these problems at the regional level would be of wide interest and would certainly provoke lively debate within the community.

Notwithstanding these criticisms, the Which Way Canterbury exercise was a means of communicating some of the results of the 'regional development strategy' research programme for public assimilation. It demonstrated the Council's commitment to involving the public in its planning programme.

The Canterbury United Council (1984b) received about the same number of written comments on the Which Way Canterbury exercise as it received when it asked for submissions on matters to be included in the now modified 'regional economic development' section of the regional planning scheme. However, the associated public discussion was probably more widespread.

Comments received covered a wide range from sectoral development issues through to the role of the Canterbury United Council. An assortment of different values was represented in the submissions. That report concluded that there is no single obvious and agreed development path for the region (where this represents a set of values and agreed role for the United Council). Development was widely interpreted in social and environmental as well as economic terms. Many submissions expressed the opinion that the Council should address immediate issues and state its views on these matters, rather than simply setting

long term objectives and policies. Some submissions argued that the Council should act decisively to achieve results in the short term.

(vii) Canterbury Regional Economic Development Study -
Regional Economic Overview

This report was prepared as a synthesis of information on the regional economy and the role of United Council economic policies. It consolidates and updates the work carried out for the "Canterbury Regional Economic Development Study - Stage One Report" (Canterbury United Council, 1981). It presents a description of the regional economy, paying particular attention to its links with the national and international scene, to broad development potentials and policy options, and to the role of the Canterbury United Council in regional economic development. From the premises and generalisations of regional economic growth theory it distils a number of guiding principles for the preparation of a Canterbury regional development strategy. These include:

'... promote development of the areas in which Canterbury has a "comparative advantage" and particular strengths, viz. its primary resource base (agriculture and, in particular, horticulture, forestry products) ...'

'Encourage growth of processed goods rather than raw materials or semi-finished products ...'

'... promote the expansion of education and research activities, particularly in agriculture and engineering ...' (Canterbury United Council, 1984a)

The report notes that regional government and regional planning have limited scope for intervening in the formal economy. It concludes that the Council's

role is limited to providing guidelines for resource allocation decisions, land use planning and the provision of infrastructure, involvement in joint ventures and partnership with the private sector (in resource development for example), and the provision of capital. It notes that the Council can play a role in the determination of regional needs and interests on nationally important projects such as community irrigation schemes, and facilitate the implementation of these developments where appropriate. It needs to find an effective procedure for participating in national policy formulation and evaluation. Regional planning provides a political focus for lobbying and submissions on government policy.

In order to influence regional development the report suggests that the Canterbury United Council should lobby central government to encourage increased investment in resource development, marketing and infant/innovative export-oriented industry, encourage an export orientation in regional resource development, and press central government to increase its efforts in the identification and development of overseas markets. Transport costs were identified as a possible impediment to development. Therefore, the report suggested that Canterbury should concentrate its efforts where the region has a competitive advantage and promote high value-added industries, the application of advanced technology and the development of new export markets. The potential for expansion of renewable resource-based development of forestry and horticulture is identified. Greater irrigation is regarded as a key to intensification and diversification of farming into areas such as horticulture, providing high value products for export markets.

(viii) 'Employment Policy' Statement

This was released by the Canterbury United Council in July, 1984. It explicitly articulates the Council's position on employment and unemployment and implicitly represents a strong statement of regional social policy. The release of the statement reveals the Council's concern with unemployment as a regional social issue linked closely with regional development.

This concern can be traced as far back as the Stage One report on the Regional Economic Development Study. That report recommended social planning initiatives in parallel with regional economic planning efforts. An argument for this was the expectation that economic initiatives in Canterbury were likely to be based predominantly in the rural areas, but social problems (such as unemployment) were expected to be growing in urban areas.

The Council later set up an employment advisory group and asked it to prepare a report on employment in Canterbury as part of the planning input for the 'Regional Development Strategy' section of the Regional Planning Scheme. The Council also assisted and sponsored the setting up of a Canterbury Resources Centre, to promote self-help employment initiatives and thus address in some measure the Canterbury unemployment problem.

The 'Employment Policy' statement is intended to provide the Council with guidelines for taking action towards the social issues associated with Canterbury employment and provide an input into the 'Regional Development Strategy' draft. Specifically the policy intends to aid the Council :

'... to assess the employment aspects of development proposals and to make an immediate and consistent response to employment initiatives.' (Canterbury United Council, 1984c)

The policy comments on the importance of employment to the individual as well as to the community, and acknowledges that unemployment is a responsibility of the community as a whole as well as the individual. Amongst other objectives it seeks full employment, allowing flexibility of work patterns to suit individual and community needs, and recognition that other forms of work (e.g. that done at home and other voluntary work) have high social value. Safety and work satisfaction are recognised as employment policy issues.

The policy states that employment should be a major objective of the regional development strategy. It proposes that in the evaluation of development options consideration be given to those forms of development which provide the most jobs per dollar invested, and build on the skills and experience of the region's labour force and industries. Diversity in economic activity is to be promoted because it is believed that this will provide greater stability of employment and adaptability at the regional level. The policy states that the Council should promote industry's awareness of management and decision making structures which improve the relationship between employers and employees.

The statement proposes that the policy be implemented through both short and long term actions by the United Council, including actions by its Resources and Policy, and Regional Planning Committees. Committee action would

allow some flexibility in response to short term employment policy issues.

The proposed actions include:

- research on employment and unemployment
- adopting employment objectives and policies in the Regional Planning Scheme
- promoting appropriate development
- co-ordination and liaison with other departments
- political action and lobbying on employment and unemployment
- public discussion and education initiatives, e.g. seminars, information kits for public use etc.

This is a strong statement of regional social policy and could assist general regional development policy. It does not discuss or identify consequences for specific sectors, but identifies and elaborates social values and objectives which could guide United Council policies on such matters.

One comment in the policy statement which seems to me to typify some confusion in development planning thinking, not only by the United Council, but also in recent national development planning initiatives, is:

'Development should meet social as well as economic objectives.' (Ibid., p.3)

What are economic objectives if they are not simply another way of stating social objectives? Economics is a discipline which seeks to describe and predict individual behaviour, especially in terms of resources and monetary behaviour. Surely it is not a prescription for human behaviour?

(ix) Consultation Report on Guidelines for Preparing the Scheme

This report is a lucid statement of the United Council's views on guidelines for a regional development strategy. It attempts to knit together the results of previous studies, discussions, and public submissions or comments.

The 'outline strategy' in the report states:

'... major commitment is required by both the public and private sector to the development of the region's resources during the initial phase of the planning period, particularly for investment in irrigation, horticulture, forestry and tourism.' (Canterbury United Council, 1984d)

The report discusses the intended contents of the 'Regional Development Strategy' scheme section. It states objectives and policies for primary production, i.e.:

'Objectives and policies on farming ... will centre on the natural resource requirements and measures which may be required to resolve priorities for resource use ... policy on farming will focus on preparing the way for development ensuring that there is broad agreement on resource use before developments are too far advanced in their preparation. There is potential for developing procedures with the MAF on the promotion of strategic changes in development. This will include particular policies directed at the intensification of agricultural activity, marketing, and may allow scope for innovative promotion measures.' (Canterbury United Council, 1984d)

The sectoral objectives indicate that the United Council plans:

'... providing a framework for the North Canterbury Catchment Board for overall objectives and policies for the development of soil and water management plans for catchments within the region.' (Ibid., p.31)

The report (Ibid., p.32) proposes that a two-part approach to planning regional development will be adopted, corresponding to a long term and constant strategy and selective development promotion on a more short term basis.

The report includes a table summarising opportunities for the development of the economy, but significantly, horticultural development only gets a mention in association with major horticultural development.

4.5 Non-statutory Initiatives

The United Council has wide scope for non-statutory, non-commercial initiatives. However, it is severely restricted in the commercial ventures it can pursue. A conspicuous example of the Council's non-statutory initiatives to date is the Canterbury Resource Centre. The Centre was set up in early 1983 using some United Council monies supplemented by other monies and contributions. The initiative follows the Council's determination to pursue social as well as regional economic planning directions. The Centre is intended to assist the unemployed through the promotion of self-help employment initiatives. This line of action has been consolidated by the preparation of a United Council 'Employment Policy' (1984). This initiative is a response to the seriousness of the unemployment problem in Canterbury. Another such example is the United Council's financial contribution towards the cost of a video 'Enterprise in Canterbury' designed to publicise the advantages of trading with Canterbury businesses.

This indicates that the United Council could assist with non-statutory development planning of Canterbury

horticulture.

4.6 The Role of Other Government Agencies in Canterbury Horticultural Development Planning

The North Canterbury Catchment Board and Regional Water Board, the Ministry of Works and Development (through a number of its Divisions), the Department of Trade and Industry, the Ministry of Agriculture and Fisheries, and the DSIR all play prominent roles in regional horticultural development.

These and other agencies are rich in resources, skills and staff relative to the Canterbury United Council.

The Council has to deal with a wide range of issues in carrying out its statutory responsibilities.

The central government agencies are often specialised, and can draw on national resources when necessary.

The United Council taps into the skills and resources of these other agencies when it can, such as for special studies, contributing specialist knowledge and skills to United Council analyses.

The North Canterbury Catchment Board has extensive technical expertise and experience in the field of land and water management, and can tap additional resources through working relationships with other government agencies. The interim report on the groundwater resources of the Central Plains area (North Canterbury Catchment Board, 1983) displays the Board's professionalism. That report has several pages of condensed information on Canterbury horticulture. It comments that the most likely area for horticultural expansion is in the area adjacent to Christchurch, which provides a market and infrastructure for the disposal of produce. It goes on to caution that MAF farm advisors do not foresee any major shift into intensive horticulture in the Central Plains region unless marketing problems are resolved. With regard to the availability of groundwater for irrigation, the report states:

'It is suggested that the present (groundwater) irrigation usage of $11 \text{ m}^3 \text{ s}^{-1}$, irrigating 34,500 ha during the irrigation season, could be doubled without presenting problems.'

On this basis a further 34,500 ha could be irrigated.

The Regional Water Board has drafted 'Water and Soils: Objectives, Policies and Priorities' which will serve as an input into the 'Regional Development Strategy' section of the scheme, and also serve in the day-to-day operations of the Board.

The Ministry of Agriculture and Fisheries has economic and resource planning capability which it contributes to government land development planning in New Zealand. The Resource Use paper series on irrigation and horticultural development economics in various regions are a good example of this work. The Advisory Services Division has a wealth of expertise which is very thinly spread in its operational responsibilities as advisor to various primary industries. It has prepared a number of short information pamphlets on Canterbury horticulture. In some areas of the country MAF has carried out or participated in various land use planning studies. However, systematic assessment of horticultural land use options in Canterbury does not appear to have been carried out. Both DSIR and MAF concentrate much of their development planning and research expertise at particular research loci or at head office.

The Ministry of Works and Development is a major development agency whose responsibilities span administration of the water and management structure, through to planning and supervision and construction of major projects such as large irrigation schemes. The report of Maidment et al (1980) is an example of the Ministry's irrigation planning work. The Water and Soil Division plays the major role in irrigation development planning. Coalitions of various university, government and private sector groups occasionally play a significant

role in horticultural development planning. Leathers et al's (1982) 'Water and Choice in Canterbury' is a thorough review of research priorities associated with Central Plains and lower Rakaia irrigation planning. As such it makes a unique and valuable contribution, not least because of its relative independence from any particular government department and the diverse multidisciplinary team who carried out the study.

4.7 Conclusions

To assess the role of regional planning in horticultural development planning in Canterbury, the institutional arrangements and associated policy making processes, the planning methods and the resulting policies all need to be considered. Both long term statutory and shorter term initiatives are relevant. An anticipatory and proactive approach to development planning would require clear identification of regional social objectives, and integration of social, economic and environmental issues into the development planning process.

The Town and Country Planning Act of 1977 provides a normative basis for planning in its specification of the 'purpose' of regional planning and the 'matters of national importance' which must be recognised and provided for. That normative framework is very strong, but I question whether clause 3(e):

'the prevention of sporadic subdivision and urban development in rural areas'

is still justified as stated. Land use, land settlement and resource development patterns are changing in favour of increased use of our large rural land resource, only some of which is yet or likely to be in the near future, used intensively for primary production in most areas. Changing social and environmental values and the demand for rural labour, favour more intensive settlement in rural areas.

Regional planning institutions are dominated by territorial local authorities and central government. Policy formulation and implementation programmes are however, more broadly based. Existing and prospective horticulturalists, and private individuals in general, are shut out of the core of the regional planning process. Horticulturalists lack the lobbying power with government and the political influence over district councils enjoyed by the pastoral and arable farmers on the one hand, and urban industrialists on the other. The public at large is given no formal right of direct participation or appeal in the regional planning process, and this must undermine the confidence of the people in the united council structure and its planning activities. As Neeson (1983) concluded from his study of water allocation decisions by water management institutions in Canterbury:

"those groups and interests whose social power is not institutionalised are unlikely to secure more than marginal changes to the status quo".

The committee and advisory group structure of the united council reveals no particular initiative in horticulture or in associated resource planning. However, horticultural development was the most widely quoted development prospect in the submissions on the notified section four of the regional planning scheme, and was cited as a means of generating employment. Advisory groups assisting the united council with preparation of various studies for the "Regional Development Strategy" section of the scheme were composed of a diverse range of people.

The planning analyses carried out under the framework of the drafting process for the 'regional development strategy' section of the regional planning scheme covered a range of social, environmental, and economic issues.

At an early stage in the planning process, a decision was made to pursue both social and economic planning initiatives simultaneously within the framework of the regional economic development study. The report of the employment advisory group (CUC, 1984c) was one contribution towards regional social planning. The employment policy stated:

"In the evaluation of development options, consideration should be given to those forms of development which provide the most jobs per dollar invested". (CUC, 1984c)

Full employment and good employee/employer relations are two of the main objectives identified in the policy.

Regional planning, as advocated by Friedmann (1963) is:

"the process of formulating and clarifying social objectives in supra urban space".

In other words, it has a strong intraregional spatial element. The importance of the spatial element is also supported by McDermott (1981).

He commented:

"A systematic and comprehensive approach to land utilisation is called for, which links physical potential with social and cultural conditions, including settlement, processing and market opportunities".

The economic planning approach taken in the published studies for the Canterbury 'Regional Development Strategy' make no such systematic study of land, water, capital and land use within the context of Canterbury development options. One of the clearest points coming out of submissions on the notified 'Regional Economic Development' section and on the 'Which Way Canterbury' report was the need for a rational approach to irrigation planning and development, looking at the full range of irrigation types and options and considering their full benefits and impacts. Instead we find references to the need for irrigation schemes littered through the various reports, with no unassailable rationale

for giving irrigation development per se priority over other forms of development investment. In fact, social and environmental issues are probably well covered by comparison. The 'Natural Resources of the Canterbury Region' is perhaps the most comprehensive regional resource inventory of its type ever published in New Zealand. The description of the macroeconomic policy environment in the 'Regional Economic Overview' (CMC, 1981a) is very comprehensive, but not a great deal of assistance in evaluating resource allocation issues on behalf of the region.

The sectoral development policies directly relevant to the horticultural sector are discussed in the 'Forestry Resources of the Canterbury Region' (CUC, 1982c) and 'Farming Development in the Canterbury Region' (CUC, 1983b) reports. The Forestry report identifies the importance of shelter in Canterbury production and argues for greater resources and importance to be allocated to that activity.

It would be interesting to compare the rate of return to the nation of planting shelter (which increases yields and eventually produces a wood crop) with irrigation development investment! The Farming report is short on analysis, hardly mentioning horticulture and concentrating its attention on the potential for increased pastoral and arable farming output, essentially adopting a production-led approach to development planning. Economics, comparative or otherwise, are seldom mentioned. Investment in community irrigation schemes by the state is the means sought to realise this additional pastoral and cropping potential. However, the horticultural development issues and recommendations are quite relevant, except perhaps for the assumption that irrigation development is the driving force of horticultural development.

The horticultural development issues raised in the various Canterbury United Council reports include: transport

services (airport and Lyttelton Port), irrigation development (surface and groundwater), processing and marketing opportunities, shelter belt planting, lack of expertise of potential growers, climatic conditions, uncertainty about markets and prices, employment, information services, development incentives, transport costs, comparative advantage, and government investment in research and development

The regional planning scheme is one place where policies can be expressed and implemented, but short-term initiatives can also be pursued. The regional planning process is limited because the united council appears to lack the resources and the skills to carry out detailed in house economic and technical studies to address key resource allocation and sectoral development issues. The various resource planning components of government at the regional level are highly fragmented. In the circumstances, and within the statutory regional planning procedure, the council is probably doing as much as could be expected. Nevertheless, regional planning of horticultural development desires bolder initiatives.

These might result from informed cooperative short term planning exercises coordinated by the united council and briefed to carry out specific studies to learn the development dynamics and requirements of the Canterbury horticultural sector. Anticipatory planning of horticultural development can't make a contribution if development planning itself is unfocussed.

5. DISCUSSION OF PLANNING IMPLICATIONS

5.1 The Focus of the Study

This study is based on three premises:

- Canterbury unemployment and low economic growth are social problems which require a sensitive government response;
- further development of Canterbury's horticultural potential is one of the viable and desirable initiatives needed to help alleviate those problems; and
- an 'anticipatory' approach to Canterbury horticultural development planning is desirable to ensure that a horticultural development initiative meets the identified social objectives and does not create unnecessary additional regional economic, social and environmental problems.

Statement of Canterbury's 'problems' in those crude terms is appropriate for this exploratory discussion. Regional planning requires a more sensitive exploration of those issues, their causes, and the contribution horticultural development options might make to reduce the identified problems.

The Canterbury United Council is currently preparing broad regional social objectives and policies as part of the 'Regional Development Strategy' section of the Canterbury Regional Planning Scheme. Unemployment is perceived as a problem but economic development initiatives are not expected to alleviate unemployment in the short term. The Canterbury United Council's (1983c) report on employment and Canterbury's future, provided some basis for an 'employment' policy. The setting up of a Canterbury Resource Centre to assist self-help employment initiatives was one response to the employment problem. The 'Employment Policy' released by the Canterbury United Council (1984c) states its commitment to full employment in Canterbury. However, in the short term, social changes are also needed which allow unemployed people to achieve

personal satisfaction outside of the workforce and 'consumer society', and to contribute in a positive manner to community life.

Horticultural development is widely believed by Canterbury people to be one of the development 'opportunities' and social change options which could help alleviate unemployment as a 'problem' and assist regional economic development. Projecting recent trends in Canterbury horticultural development gives some indication of the order of development which may be realistic. Recent figures on vegetable production do not show any consistent trend to increased or decreased vegetable production. Vegetable production is adaptable to the circumstances of weather, price etc. in any particular year and does not require a medium to long term production commitment as does fruit production. The Canterbury area planted in fruit crops has been increasing in recent years. An arithmetical projection of recent fruit tree planting trends would suggest that an additional 280 hectares would be planted for fruit production between 1983 and 1990, generating about 120 jobs in the regional economy and \$(1983)4 million in additional fruit output (assuming stonefruit production at 1983 prices and yields as used by Walker and Forsyth, 1983). However, a geometric projection to 1990 on recent trends would suggest an additional 1,200 hectares planted in fruit trees resulting in about 500 jobs and \$(1983)18 million in additional stonefruit output. In the former case this represents a 50% increase in the area of the Canterbury region planted in fruit and in the latter a trebling of the current area of fruit orchards. Neither of these projections is a prediction but illustrates the scale of development suggested by current horticultural development trends.

Other resource development initiatives are possible and would clearly be desirable. Some of these may compete for resources with horticultural development and others would be regarded as sympathetic, or parallel and complementary developments. This study does not make any comparisons

between alternative development initiatives, but other development possibilities exist in tourism, forestry, arable and pastoral farming, high technology and secondary industry. For example, the community irrigation schemes being promoted for the Lower Rakaia and Central Plains areas would result in an expansion of output from pastoral agriculture, additional cropping and perhaps some incidental horticultural development. These schemes would be expected to generate 570 jobs in the region, increase farm output by \$(1981)30 million, require capital in the order of \$(1981)140 million to construct the irrigation schemes, and irrigate up to 96,000 hectares of the Canterbury region (Leathers et al., 1982).

Successful development of the Canterbury horticultural sector will require a transformation of its outlook and organisation to the development of products, production, distribution, and marketing systems oriented to export markets. This may require changes in the existing services and infrastructure, a change to greater industry and sectoral co-operation, specific initiatives in the areas of product and market development, greater awareness by local, regional and central government of the effect various policies have on the Canterbury horticultural sector and their reshaping in sympathy with horticultural development objectives and other broader environmental and social policies.

The remainder of this chapter discusses planning approaches for assisting development planning by the private sector, and regional planning of horticultural development by government. The discussion draws on the material earlier in the study, discussing these two planning issues within a broad planning framework.

5.2 Regional Sectoral Planning

5.2.1 General Objectives

The horticultural industries seek a good environment for continued successful business and industry development, and a framework for co-operating to overcome common problems. This would be assisted if there was some interim or longer term arrangement for regional co-operation of all components of the sector, with the object of identifying common needs, priorities and strategies for action.

The utility of this is suggested by recent development problems (Chapter 3), e.g. the blackcurrant story, the decline in the strawberry industry, and container and air freight limitations. The need for good product and market information to assist investment decisions is another example of a common issue which is suited to co-ordinated rather than individual response. If the industries are able to make their needs clear and provide information which would assist the United Council and other government departments with regional planning and policy initiatives, then both would gain. The United Council, in association with resource planning agencies and other government departments, would be in a position to formulate more effective and sensitive policies for the 'Regional Development Strategy' of the Regional Planning Scheme, and thus influence both central and local government policies. The industries would be less likely to be inadvertently constrained, and may be assisted, by government policies.

What sort of institutional framework is appropriate for such a planning initiative, what planning procedures could be used and what specific issues would have to be dealt with?

5.2.2 Institutional Framework

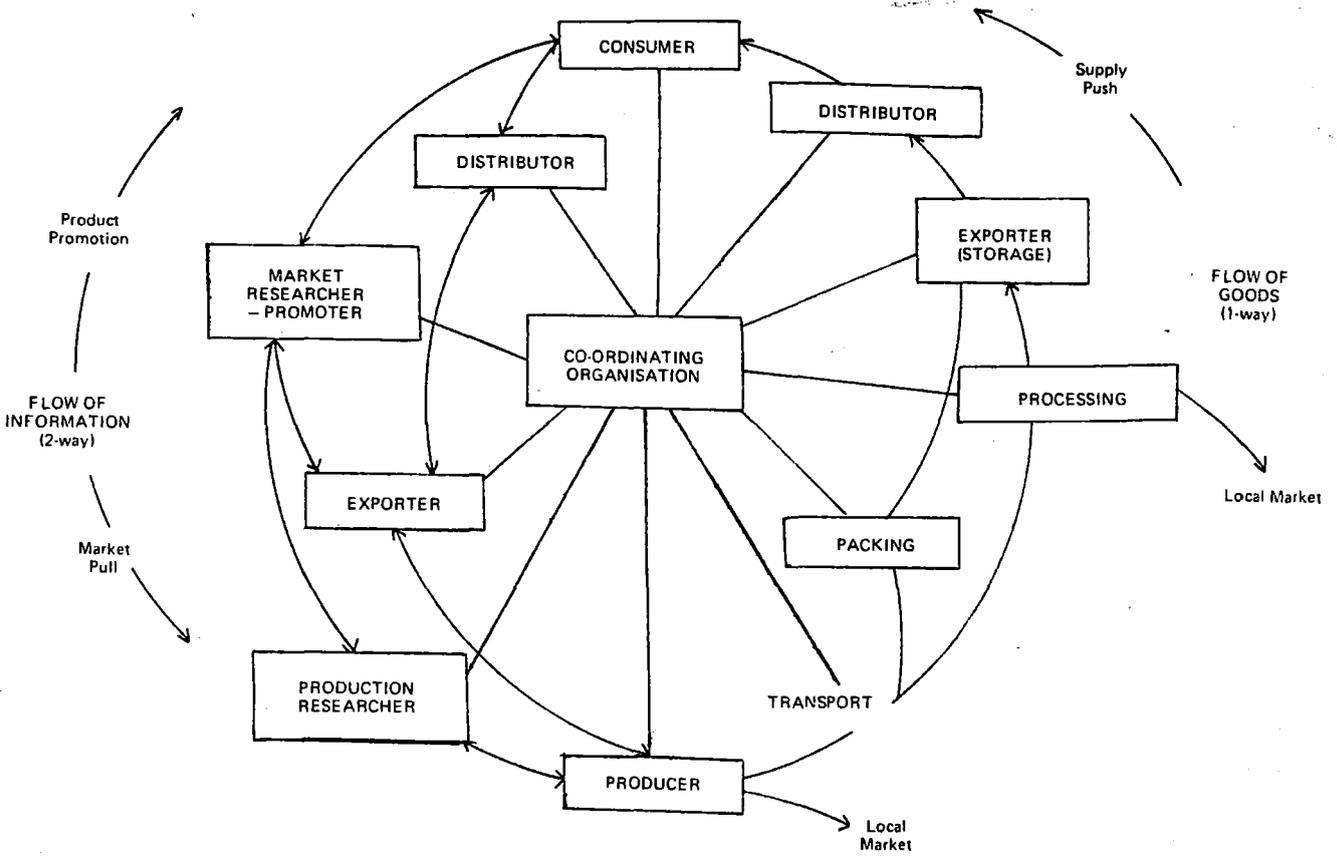
Chapter 2 discusses the horticultural sector, its structure (section 2.2.2) and dynamics (section 2.2.4). The 'product-market channel' concept is offered as the basic unit of industry structure and function, and it is therefore suggested as the smallest unit at which effective industry co-ordination can be achieved.

The Horticultural Export Development Committee (1982) advocated a similar concept and framework (figure 5.1). The Committee argued that achievement of horticultural potential would require communication and co-ordination between the different sectors of the industry. The report (Ibid., p.6) suggested that export development, marketing, financing, product identification, and government research and support services should be included within a co-ordination framework. The government is an important participant in the sector's operations and development, providing research in marketing and product development, finance, advisory services, and infrastructure, amongst other functions. Therefore, a joint private/public sector co-ordination framework is appropriate.

However, a key issue stimulating the formation of the co-ordination frameworks proposed by the Committee was the need for effective marketing, market information and 'strong' sellers in the market place. 'Weak' selling can arise in an unregulated export industry where different export salesmen compete with each other in securing overseas sales, on occasion of the same consignment of product!

The need for a framework for horticultural industry at a regional level has a different character. The issues are more likely to relate to infrastructural (e.g. air transport services) and servicing needs (e.g. additional product and market development research), or to issues of government policy (e.g. shelter and irrigation subsidies, subdivision policies etc.). Fragmentation on an industry by industry basis with

Figure 5.1 Possible Industry Co-ordination Framework
 Reproduced from Horticultural Export Development
 Committee (1982)



co-ordination at national level would not address these regional issues.

The Canterbury region is too small to maintain the support structures for co-ordination of individual industry groups on an industry by industry basis, and even if it did, there would be merit in aggregating these groups into one regional horticultural co-ordinating framework to deal with broad issues. Packaging, processing, cool storage and transport interests will be involved in most industries. Considering these questions on a sectoral basis may reduce duplication of effort. Marketing and product development information would be sought by all industries and could be more efficiently dispersed on a sectoral basis.

Individual producers need to identify with the needs of the market, rather than adopt a supply/product approach oriented to preserving existing product industries when consumer trends are moving away from them. In the highly competitive and rapidly changing international market, growers may alter their products and varieties on an ongoing basis to keep pace with changes in consumer demand and product prices.

Therefore, co-ordination of sectoral planning effort at the regional and sectoral level would seem appropriate. Whether this co-ordination would be task oriented or whether some formal affiliation of interests is needed is another question. Some industry groups may already provide a useful nucleus, e.g. the regional branch of the New Zealand Fruitgrowers Federation, but appropriate government agencies also need to be involved.

5.2.3 Planning Procedures

The ideal arrangement would be for the group to be formed on an interim basis to organise particular tasks related to the development of the industry. It would act as a steering group for a small group of skilled advisors, planners and analysts. This team would span the range

of experience and skills needed to carry out the research and analysis needed to fulfil the planning tasks.

The corporate strategic planning approach has merit as a means for pinning down the sector's needs, priorities and appropriate actions. This would involve a small team of analysts servicing a consultation process within the sector focusing on:

- (1) a review of the sector's performance, opportunities and potential, including trends in consumer preferences, product and market prospects.
- (2) analysis of the 'external' factors, i.e. the political, social, economic and technological factors that affect the various industries and are independent of industry control, e.g. government policies.
- (3) critical examination of the components of the sector and their relationships.
- (4) analyse the implications of these, identifying weaknesses, opportunities, threats and strengths.
- (5) identify overall joint objectives.
- (6) carry out programmes to achieve objectives, e.g. lobby government for upgrading of transport systems.
- (7) monitoring and feedback.

This framework was adapted from So (1984). 'Strategic planning' as a management tool in the private sector has recently been criticised on a number of grounds: overemphasis on strategy formulation and on sophisticated techniques such as portfolio analysis (Kiechell, 1982; Eadie, 1983); overemphasis on the 'whizz-kid' approach without proper regard for the realities of organisational operation and the people who would be expected to implement strategy (Stonich and Werneke, 1982; Businessweek, 1984). However, the basic discipline of the method provides a useful analytical framework.

5.3 Regional Planning Initiatives

From the review of regional planning's role in horticultural development in Canterbury, it was clear that although some key development issues had been identified, the dynamics of growth in the Canterbury horticultural sector, and its social, environmental and economic implications are not yet understood.

On the assumption that horticulture is an important development direction for Canterbury, one where the region has a lot of potential and can expect to compete with other regions, further efforts need to be made.

The Canterbury United Council has limited resources. Regional resource planning skills and efforts are currently diffused between a number of central government and local agencies. The best that the Council can do in that situation is attempt to stimulate joint initiatives with the industry and the other resource planning agencies towards achievement of its planning objectives.

If it was possible for the United Council to participate in a cooperate regional sectoral strategic planning exercise, this would be very valuable. The Council could contribute by identifying and reviewing those government policies which affect the sector.

More involvement by the United Council in 'operational' short-term planning roles of this sort would provide good material for longterm studies, develop links within the community that would heighten the Council's credibility in the eyes of the public, and build up a more effective regional planning network.

That information would then place the Council in a position where it could start to formulate a regional strategy for horticultural development, consistent with identified regional social objectives.

Two particular areas of research are very urgent if meaningful regional planning is to take place rather than simply adhoc reactive responses.

- (1) An analysis of a range of land development options for the Canterbury region. This would look at water resource use, capital cost, land use, employment creation, social and environmental impact, net returns and effect on regional output. It could contrast horticulture and community irrigation scheme development. Groundwater development versus surface water utilisation. Informed debate on these issues would seem desirable at this time. In too many cases irrigation development is identified, erroneously I believe, with horticultural development.

- (2) A study of the social dynamics of horticultural development would assist the United Council in the formulation of specific social objectives associated with horticultural development. Therefore, those involved as owners, managers, full-time and part-time horticultural assistants should all be included. Their attitude to their work, motivations, etc would help to provide useful information on the social impact of horticultural development.

5.4 Horticultural Development Issues

The following are some key regional development issues which have been discussed earlier in the text and warrant more detailed analysis and action.

- . market and product opportunities
- . more effective utilisation of government research effort focused at Canterbury needs.
- . comparative advantage of Canterbury for various products versus a number of competing regions
- . irrigation developments to suit the needs of the horticultural industry. Probably small scale and supplies from groundwater ,
- . shelterbelt planting
- . sharefarming or profit sharing as a means of attracting high quality management and production skills and providing incentive for achievement.
- . transport services adapted to industry needs. For example, more direct flights from Christchurch to Australia, United States or Japan.
- . the effect of rural subdivision policies on the market for horticultural units
- . efficient use of water, land and financial resources in the achievement of regional goals.

GLOSSARY OF ACRONYMS

CUC	Canterbury United Council
DSIR	Department of Scientific and Industrial Research
MAF	Ministry of Agriculture and Fisheries
MWD	Ministry of Works and Development
NCCB	North Canterbury Catchment Board and Regional Water Board
NWASCO	National Water and Soil Conservation Organisation

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