

The Development of Organic Horticultural Exports in New Zealand

**Hugh Campbell
John R Fairweather**

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**Agribusiness and Economics Research Unit
PO Box 84
Lincoln University
Canterbury
New Zealand**

**Ph: (64)(3)325-2811
Fax: (64)(3) 325-3847
E-mail: fairweat@lincoln.ac.nz**

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Preface

New Zealand exports of organic horticulture have rapidly increased in value to reach \$23.5m by 1997. A number of earlier reports have investigated the development of organics in New Zealand. An AERU Research Report completed in 1996 investigated the decision making of organic and conventional agricultural producers in the Canterbury region. Four regional studies have also been completed on organics in Bay of Plenty, Canterbury, Gisborne, and Nelson and Golden Bay. These studies provide the basis for understanding of key factors in successful exporting of organic products. The present report provides a summary of the findings that is accessible to participants in the industry and answers key questions about the industry.

Ross Cullen
DIRECTOR

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CHAPTER ONE

INTRODUCTION

The following report presents a summary of findings from a series of publications arising from the FRST Public Good Science Fund programme 'Optimum Development of Certified Organic Horticulture in New Zealand'. This research programme started in 1995, and in mid 1998 had completed three years of research into four regional case studies of organic export development. To date, there have been a number of reports and other publications which have sought to outline various aspects of organic agriculture in New Zealand¹, contribute to reviews of the organic industry², or attempt to situate organic developments in New Zealand within wider trends in world agriculture, politics and trade³. Given the wide content of these publications, the many different arenas in which they have been published, and the encouraging level of interest from members of the organic agriculture industry, it is timely that an attempt be made to provide a basic summary of the findings. The present report attempts to do this in a way that is accessible to participants in the industry, and which will attempt to answer key questions about the industry. The most important issue is identifying key factors involved in successful exporting of organic products.

There is clearly a need to establish more sustainable forms of agriculture in New Zealand. This report discusses the findings of a research programme which was designed to examine the extent to which organic agriculture provides some solutions to issues of agricultural sustainability. The approach differs somewhat to other discussions of sustainability which attempt to posit models apparently suitable for the achievement of 'sustainable development'. This report examines what **is** developing in organic agriculture rather than what **ought** to be developing. The rationale behind this approach is that systems of agricultural production are very complex. At the local level, any farming activity involves complex relationships between technical, environmental, social and economic factors.

Consequently, models of how agriculture **ought** to develop often falter in their application by failing to embrace the complexity of local situations. In this way, the green revolution was less than successful in many countries when green revolution technologies were transferred from test plots at laboratories to real farming situations in Third World countries. In the same way, the elegant solutions provided by rural extension agents in countries like Australia have often proved incompatible with the reality of farming as experienced by farmers. It is in the light of these critiques of development models that this research programme has addressed issues of sustainable development as demonstrated by the real development of organic agriculture. Our research

¹ See Campbell (1996a), Fairweather (1996) Campbell, Fairweather and Steven (1997), Coombes, Campbell and Fairweather (1998), Coombes and Campbell (1998a), Liepins and Campbell (1998).

² See Saunders, et al. (1997).

³ See Campbell (1996b, 1997), Campbell and Coombes (forthcoming), Coombes and Campbell (1998b).

questions are geared towards how farmers and organisations have attempted to create successful development in organic agriculture at the local level.

This real world approach is informed by the work of Kloppenburg (1991) (see also Kloppenburg 1992; Hassanein and Kloppenburg 1995; Flora 1992; Molnar *et al.* 1992) who argued that the development of sustainable agriculture must be firmly rooted in an understanding of local dynamics, local knowledge and the working out of complex local factors. In fact, at the heart of Kloppenburg's argument is the acknowledgment that the generic focus of much model-building in agricultural science has been part of the problem: they develop systems of production that seem highly productive in their abstract conception but do not fit in with local environments, farming practices and food products when actually applied to specific situations. Kloppenburg's approach suggests that we might need to take a less deductive and more inductive approach to understanding agricultural sustainability - looking at the way in which specific systems have emerged by trial and error in specific local situations, and then generating wider insights from these specific instances. It is this kind of approach to understanding agricultural sustainability that has been taken in this research programme.

In designing this research programme, our approach was to select what, in 1994, was the only significant system of agricultural production actually operating which made claims towards 'sustainability', namely, the potential for the system to still be environmentally, socially and economically viable in the long term. Organic production was a worthy object of study because, in 1994, it had the following characteristics: a historical profile, standards, an audit process, some technology transfer, a body of committed growers, processing and distributional infrastructure, and significant demand in the marketplace. In contrast, the only other possible contender as a system of environmentally enhanced food production - Kiwigreen - was still in its development phase and was at that point several years short of being fully realised.

Consequently, organic production provided this research programme with the opportunity to study the real development of a system of sustainable production 'in the field'. This research was undertaken in four case study regions in New Zealand - Canterbury, Bay of Plenty, Gisborne, Nelson - which were selected in order to provide contrasting factors which we thought might influence the local development of organic production. The distinctive features of each region are listed as follows:

- Canterbury was selected because it is a major site where Heinz-Wattie Ltd (HWL) developed broadacre production of organic process vegetables for exporting. Canterbury had a long established history of organic production. Research in this region was conducted in 1995/96, and initial results were presented in Campbell (1996).
- Bay of Plenty is dominated by one major organic crop - kiwifruit - which forms a significant share of the total value of organic exports from New Zealand. This has been developed by the New Zealand Kiwifruit Marketing Board (now Zespri International Ltd - henceforth ZIL). Research in the Bay of Plenty was conducted in 1996/97 and initial results were presented in Campbell, Fairweather and Steven (1997).
- Gisborne is unusual in that an export industry in organic sweetcorn has been developed by HWL with little input from any pre-existing organic growers. Gisborne was developed as an organic 'terra nullius' but now is one of New Zealand's key organic exporting regions. Research into

the Gisborne region was conducted in 1997 and initial results were presented in Coombes, Campbell and Fairweather (1998).

- Nelson has only low levels of organic exporting and our initial expectation was that there would be limited development of a domestic market for organic produce and therefore provide a useful contrast to the other three export-dominated regions. However, our field work showed that there has been a significant increase in domestic market activity in the last 3 years.

Research into the Nelson region was conducted in 1997/98 and initial results were presented in Coombes and Campbell (1998a).

Table 1 summarises the key characteristics of the four study regions.

Table 1
Characteristics of the Four Study Regions

	<i>Canterbury</i>	<i>Bay of Plenty</i>	<i>Gisborne</i>	<i>Nelson</i>
Year of field research	1995/1996	1996	1997	1997/1998
Export Production	High Export	High Export	High Export	Low Export
Domestic Production	Moderate/high domestic	Low domestic	Very low domestic	High domestic
Dominant intermediaries	HWL and other medium sized companies	ZIL	HWL and emergent smaller exporters	None (some may soon emerge)
Main products	Process vegetables - peas, carrots, beans. Squash	Kiwifruit	Process vegetables - sweetcorn, peas. Squash	Fresh citrus, fresh vegetables
Certification	Predominantly BIO-GRO NZ, some Demeter and uncertified growers	Predominantly BIO-GRO NZ, some Demeter and uncertified growers	Predominantly BIO-GRO NZ, one company label	BIO-GRO NZ, Demeter, and uncertified
Organic history	Many long term producers, grower organisations, Lincoln University CRI's.	Some long term producers, grower organisation, BOP Polytech	No long term producers, no grower organisation	Many long term producers, grower organisation
Technology transfer	Grower networks, field-days, company activities, University, Polytechnic	ZIL, packhouses, grower organisation, Polytechnic	HWL activities	Grower networks and organisations
Production Type	Broadacre rotational horticulture with livestock	Permanent Orchard	Broadacre rotational horticulture without livestock	Permanent Orchard, intensive vegetable production
Status of land ownership	Private holdings	Private holdings (some leased orchards)	Private holdings, Maori land trusts, leased land	Private holdings
Degree of conversion of whole property to organic production	Mostly partial moving towards full conversion	Partial and full conversion	Mostly partial, moving slowly towards full conversion	Mostly full conversion
Main technical barrier to further development	Need for full rotation of organic products - no market for organic meat	Few	Soil fertility	Pest/disease control in apples

The overall goal of this research programme has been to construct optimum development scenarios for the development of export organic agriculture which seek to identify the particular factors (or relationships between factors) which have characterised successful development of organic export production in each region. Similarly, there may be certain factors which have hampered development of organic production. It is important to note, however, that this programme

concentrated on four provinces that all had evidence of some degree of *successful* organic exporting. In hindsight, to more fully comprehend barriers to development, other regions would have provided a much clearer picture of the non-development of organic production.

While the development of organic production has predominantly been examined at the regional level, there are also obvious factors such as actions by the state, certification, and generic trade issues that operate at the national level. To accommodate these factors, a brief overview of the national development of organic production will be presented prior to discussing the regional findings.

This report presents a summary of the findings of previous publications based on research conducted within the four regions. It then goes on to discuss the implications of these regionally-based findings for the development of optimum development scenarios which have implications for the development of organic food exporting in New Zealand as a whole.

CHAPTER TWO

NATIONAL OVERVIEW: ORGANIC DEVELOPMENT SINCE 1990

Prior to 1990, New Zealand's agricultural producers had experienced a period of profound restructuring which undermined confidence in both existing staple commodities and the conventional systems that produced them. Campbell and Coombes (*in press*) detail the way in which economic restructuring and a global crisis in agricultural trade, drew a political response in New Zealand which emphasised the need for further expansion of food exports and an undermining of New Zealand's traditional commodities⁴. This broad context set the scene for the specific development of organic food exports after 1990. In 1990, New Zealand's organic industry was very small and characterised by low participation and consumption. A Ministry of Agriculture report (MAF 1991) estimated that the total value of organic food traded in New Zealand in 1990 was NZ\$1.1 million, and this was almost entirely in the domestic market. This represented a very small level of per capita consumption of organic food compared to European countries.

In the subsequent eight years, the level of organic production - particularly for exporting - has increased dramatically. Two large corporate entities Wattie Frozen Foods Ltd (now Heinz Wattie Ltd., henceforth HWL), and the NZ Kiwifruit Marketing Board (now Zespri International Ltd., henceforth ZIL) - began to experiment with organic production systems in 1990. HWL and ZIL have been the most significant players in the early development of an organic export industry, however, recent membership of the newly formed Organic Products Exporters Group indicates that while the two biggest companies have continued to expand their organic production, at least 30 other organisations have joined them in exporting organic produce. In the last two years, an increasing number of larger growers and small companies have also targeted a growing domestic market for organic food.

The target market for such exports is Japan, the USA and Europe. By 1997, the high prices being commanded in Japan began to absorb the great majority of organic food exports. Saunders et al. (1997) documented the following statistics (Tables 2 to 4) on the world market for organic food, although these are, at best, estimates.

Table 2
Value of Organic Production in NZ\$millions

	<i>Domestic</i>	<i>Export</i>
1990	1.0	0.1
1995	N/A	6.0
1996	N/A	10.0
1997	10.5	23.5

⁴ This section draws extensively on Saunders et al. (1997) and Campbell and Coombes (forthcoming).

Source: Saunders et al. 1997

Table 3
Markets for Organic Food Exports

	<i>Year</i>	<i>Value in NZ\$ of market</i>	<i>Annual growth rate</i>
Japan	1994	\$769 million	+20%
EU	1994	\$6.75 billion	+25%
USA	1995	\$4.3 billion	+30%

Source: Saunders et al. (1997)

While there were some fears that the emerging export market for organic foods would adversely affect the domestic market for organic produce, this has not eventuated with the domestic market starting to increase on the back of export production. This market is still small, however, compared to levels of organic consumption in other western societies. If New Zealand had the same levels of domestic organic consumption as some of our main trading partners the economic significance of the domestic market would be far greater.

Table 4
Per Capita Consumption of Organic Food, 1997

	<i>Per capita consumption in \$NZ</i>	<i>Total (potential) NZ market extrapolated from per capita consumption</i>
New Zealand	\$3.00	\$10.5million
Australia	\$5.61	\$19.6million
Germany	\$21.25	\$74.37million

Source: Saunders et al. (1997)

Consequently, there is now a trend emerging in the spatial distribution of organic growers in New Zealand. Whereas previously certified organic growers had been distributed throughout New Zealand with some concentration in areas of domestic consumption like Auckland and Nelson, those regions that are experiencing export growth are now dominating the industry. Table 4 shows that even in the last three years, there has been a significant shift in this direction. It is possible that the change in certified area or farm gate value would be even more impressive than number of growers especially in the third group of provinces.

Table 5
Distribution of BIO-GRO NZ Certified Organic Producers

<i>Province</i>	<i>Proportion of total number of growers in 1994</i>	<i>Proportion of total number of growers in 1997</i>	<i>Change in grower numbers 1994-1997</i>
Northland, Auckland	20%	5%	Strong Decrease
Waikato, Coromandel, Taranaki/Wanganui, Wellington, Nelson, Marlborough, Timaru/Oamaru, West Coast, Otago, Southland	29%	26%	Steady or Slight Decrease
Bay of Plenty, Gisborne, Hawke's Bay, Manawatu, Nth Canterbury, Canterbury	51%	69%	Slight or Strong Increase

Source: BIO-GRO NZ licensee lists

Another consequence was a changing pattern of land use by organic growers. While BIO-GRO NZ licensee returns do show up some of this pattern, they are rather inaccurate due to a tendency towards inconsistency by licensees when filling out their returns. The table shows increases to 1997 in all categories except permanent pasture, which has declined. Most of the increase is with mixed crops – and this is where exports of peas, carrots and sweetcorn are represented.

Table 6
Organic Production by Area (ha)

<i>Production Type</i>	<i>Proportion of 1994 Total</i>	<i>Proportion of 1997 Total</i>
Permanent Pasture	68%	54%
Mixed Crop	20%	31%
Market Garden	2%	3%
Orchard	4%	5%
Other	5%	7%

Source: BIO-GRO NZ licensee lists

A complication with the figures represented in Table 6 is the tendency for the hectareage of pastoral land to swamp the hectareage of intensive horticulture like kiwifruit production. This makes any meaningful analysis of changing intensive land use like market gardening and orcharding impossible from these figures.

One key feature of the New Zealand industry was that this entire development has taken place without any encouragement or subsidisation by the state. Through the 1980s, the Ministry of

Agriculture and Fisheries (MAF) provided some research assistance and conducted limited R & D on organic production (which effectively ceased with the restructuring of state provision of research funding in the 1990s). The main form of state support has been the formation of a Joint Action Group by Tradenz - the Organic Products Exporters Group (OPEG) - to help coordinate export activities. There have been no forms of price support or support for conversion for organic farmers as are seen in the EU.

This general expansion of organic production benefited from a number of features that existed in the industry in 1990. These were predominantly derived from the activities of the New Zealand Biological Producers and Consumers Council, which was an umbrella group that formed out of a disparate collection of alternative agriculture groups in 1983. This group later became BIO-GRO NZ Ltd, and provided several important benefits for companies interested in exporting organic produce, including:

- The formalisation of written standards for organic production, a task that was under way by the end of the 1980s.
- The institutionalisation of one main labelling and inspection system, initially through volunteer inspectors, but later through a more professional inspectorate that could provide legitimate third party inspection for organic produce.

The general presence of organic agriculture in New Zealand prior to 1990, also had two more direct benefits for large corporate entities that took an interest in organic products:

- Organic products were already being produced successfully by pioneer organic growers for a number of key products like kiwifruit and some vegetables. It was easier for the exporters to develop a platform for products that they knew could be grown than to develop new products from scratch.
- There was an existing market for organic products overseas. The international status of the organic agriculture movement and the legitimacy of BIO-GRO NZ's label for overseas consumers meant that there were reduced marketing barriers for an organic product from New Zealand.

These features of organic agriculture made organic production a vastly more attractive option for businesses than developing a 'green' production system from scratch. In return, the involvement of corporate actors in the organic industry created a situation in which organic production could dramatically increase. Three major benefits flowed from the participation of large entities like ZIL and HWL:

- The image of organic production became vastly less marginal in the eyes of government agencies and by conventional producers. While some conventional producers still associate organics with the 'hippy fringe' a significant number now see it as an acceptable alternative production system.
- Corporate entities provided one key feature that had hitherto hampered organic development - infrastructure to link producers to markets. The corporates had already established market links with large institutional purchasers in places like Japan and the USA, and were able to coordinate the activities of numerous growers to provide the necessary volumes required to service these customers.

- Corporate entities also provided access and support for R & D activities which assisted the technical development of organic production. This is true for both direct research into organic production and research which has cross-over benefits like the development of Integrated Pest Management as part of the Kiwigreen programme in the kiwifruit industry.

This emerging relationship between large business entities and organic agriculture was not necessarily achieved without difficulty. The arrival of large exporters and the conversion of numerous conventional producers to organic production received mixed support from many members of the organic agriculture movement. This is no surprise as the entire history and identity of the organic agriculture movement both internationally and in New Zealand was established in direct resistance to developments in ‘scientific’ agriculture - particularly after WWII. The emergence of large agri-business companies was seen by many organic agriculturalists as being symptomatic of some of the problems associated with mainstream agriculture and that involvement with such entities must involve a compromising of organic ideals.

BIO-GRO NZ has undoubtedly developed a dominant position in the industry due to the successful development of exporting, the number of new licensees and the revenues that are subsequently generated. This success has, however, undermined some of the confidence of long-term adherents of the organic agriculture movement in the practices of BIO-GRO NZ. In 1994, a significant number of long term growers left the BIO-GRO NZ certification system due to increases in the inspection fees that BIO-GRO NZ had instituted in an attempt to professionalise inspection services (see Table 2.6).

Table 7
Changing BIO-GRO NZ Licensee Numbers

	<i>1992</i>	<i>1994</i>
Number of Licensees registered in 1992	232	163
Number of New Licensees	N/A	90
Total Licensees	232	253

Source: BIO-GRO NZ Licensee lists

While the overall number of BIO-GRO NZ licensees increased slightly during the years of most internal dissent among the membership of the organisation, Table 7 shows that the new recruits to the industry were only marginally offsetting those long term licensees who were no longer seeking certification through BIO-GRO NZ.

To many members of the organic agriculture movement, the transformation of BIO-GRO NZ after 1992, in order to professionalise inspection and administration, signified a break with the past identity of BIO-GRO NZ as a representative of the organic agriculture movement in all its forms and a move towards a new identity as the professional certifier of an internationally recognised set of organic standards. This image was partly redressed in 1997 with the introduction of a small grower scheme at a lower cost structure for certification which appears to have attracted many small growers back into BIO-GRO NZ certification (Coombes and Campbell 1998a).

The negative impacts of a strong concentration on the export market between 1990 and 1997 has also been partially ameliorated by the fact that domestic and export production have taken place in separate regional spaces (see Coombes and Campbell 1998b). Much of the export growth has taken place in areas where little domestic organic activity was occurring anyway.

Given the tensions between the needs of exporters and the aspirations of long term organic agriculturalists, it is curious that this development was able to occur with such a degree of success. What proved critical to this process was the changing way in which organic growers were declared to be 'legitimately' organic. Prior to 1983, organic growers were declared to be legitimately organic simply through their participation in the organic agriculture movement. In this context, large companies would have found it difficult to enter the organic scene and use this kind of legitimacy for their own products. By 1990, however, the development of a written set of standards for organic production and a formal inspection and certification service meant that any grower who met these criteria *had* to be certified. Despite the fact that BIO-GRO NZ certification requires organic practices to be established in three areas - Person, Property and Product - actually establishing the degree to which a Person adheres to organic philosophy has proved difficult in a rapidly growing industry. This situation is muddied further by the fact that many new growers admit that they entered organic production in search of a premium, but underwent 'progressive conversion' to the wider goals of organics⁵. Consequently, some BIO-GRO NZ inspectors have been reluctant to withhold certification on newly converted producers along the grounds of adherence to organic ideology in the hope that pragmatists will progressively become ideologically committed.

In this context, large companies could confidently contract a number of recently converted conventional producers knowing that no matter how many misgivings the traditional members of the organic agriculture movement expressed, they were very unlikely to be prevented from gaining full certification if they met the technical requirements for organic production. What had occurred was a transition from organic agriculture as a social movement committed to an overall goal of sustainability in New Zealand agriculture (a social movement which certainly still exists in residual form) to a more formally organised structure with transparent rules of association. The result was that 'organic' became a labelled quality able to be certified and legally attached to certain types of food product rather than a descriptive category for a particular social movement. In the old situation, transnational corporations would have found it difficult to gain a foothold: in the new situation, organically produced food is able to be traded internationally like any other food product. The critical transition that effected this outcome was the formalisation between 1983 and 1990 of an 'objective' set of organic production standards.

⁵ The same dynamic was observed in the kiwifruit industry as growers who were initially sceptical of the merits of the Kiwigreen programme (an Integrated Pest Management system being promoted by the NZKMB) gained first hand experience over time and then became more supportive of the Board's policy in promoting the programme.

CHAPTER THREE

REGIONAL SUMMARY - CANTERBURY

The Canterbury region has been one of the most prominent in the development of both domestic and export organic production. In 1990, Wattie Frozen Foods Ltd contracted to purchase the harvest of a paddock of organic peas near Dunsandel. From this point, export production of process vegetables and squash grew dramatically in the area. However, while 1990 marks a significant turning point for the region, many factors were already in place that made Canterbury suitable for the development of organic food exporting. This section will examine the following aspects of organic production in Canterbury:

- Canterbury's role in the early development of organic agriculture
- The regional physical and cultural context
- Development of the export industry.

3.1 Early Development of Organic Agriculture

Canterbury has often been seen, by members of the organic agriculture movement, as a province which provided leadership in the development of organic production. While the NZBPC (later BIO-GRO NZ) was not formed until 1983, prior to this point certain activities had taken place in Canterbury which gave important impetus to the development of organic agriculture. These were the:

- Establishment of courses on organic production and the establishment of the Biological Husbandry Unit at Lincoln College by Bob Crowder in 1977.
- Opening of Pikos Wholefoods/Whole Foods Producers Co-operative in 1979/80.
- Formation of the Canterbury Organic Producers Group in 1980/81
- Establishment of organic gardening as a course at Christchurch Polytechnic's Sevenoaks campus in the city.

What these organisations represent is more than just institutional support of organic agriculture. They also show that for 10-15 years prior to the arrival of organic exporting in 1990, Canterbury was a vibrant area for the development, experimentation and dissemination of the skills, techniques and philosophies of organic production. The importance of Canterbury as a flagship province for organics was confirmed with the spectacular success of a conference promoting organic production which was hosted by Lincoln College in 1988, had keynote addresses from leading members of the International Federation of Organic Agriculture Movements, and was attended by around 600 people. The success of this gathering was mirrored on an even greater stage when Lincoln hosted the IFOAM world congress in 1994. Through the presence of a strong local following for organic production, and the efforts of Bob Crowder as a champion for organic production (and a promoter

of New Zealand organics on the world stage), Canterbury became recognised as the flagship province in the development of the ideas and skills associated with organic production.

3.2 Canterbury's Environmental and Social Context

The geography and climate in Canterbury is in many ways suitable for organic production. The peri-alpine Canterbury Plains experience extreme cold in winter and an intensely dry growing season in summer. This provides the opportunity for crops to grow without permanent populations of pests or fungi which are a significant problem in more moist regions. Canterbury's climate is subject of adverse extremes including heavy snows in winter and drought conditions in summer. While these are a major challenge for all Canterbury farmers they affect organic farmers and conventional farmers in the same way.

The history of farming in Canterbury has involved mixed production of crops and sheep. Throughout the history of the region, dating back to the advent of refrigerated transport, Canterbury farmers have engaged in a 'sheep/crop' pendulum depending on the relative value of these product types. Consequently, Canterbury farming, more than any other province, had experienced a long term managerial style which embraced the use of mixed farm rotations that were suitable for use in organic production. Many farmers interviewed in Canterbury argued that when introduced to organic management styles their parents or grandparents immediately recognised such techniques as 'the way farming used to be' prior to WWII. There was a sense of familiarity for those who had grown up in Canterbury's farming culture.

More recent events also contributed to a preparedness by farmers to experiment with organic production. The liberalisation of agriculture in 1984 triggered a major restructuring of agriculture in the region which had a severe impact on most farm families. From this period of crisis a number of factors emerged:

- Many farmers become very disenchanted with established farming practices and became doubtful of the future viability of conventional agriculture. Specific features of this disenchantment was an emerging suspicion of the validity of advice from traditional stock and stations firms, banks, farm advisers and research institutions.
- In order to survive many traditional sheep or crop farmers were moving away from staple production of sheep and wheat and were looking for new kinds of products to grow.
- Existing mixed farms increased the range of products they produced to decrease reliance on any one product.
- A perception developed that many young farmers who produced 'by the book' using the latest scientific techniques taught in tertiary institutions had gone bankrupt while many older farmers had survived. In light of such contrasts, adopting pre-war techniques to produce high-value products made perfect sense.

All these features of the rural crisis in the mid-80s predisposed some farmers towards experimenting with organic production - something that would have been vastly less probable in the 1970s.

3.3 Developing an Export Industry

There were some small exporting activities in Canterbury prior to the development of the WFF programme. These mainly involved the exporting of organic squash. It was the arrival of WFF in the organic industry that saw a rapid rise in the amount of organic production in the region.

A number of factors combined to trigger the WFF organic experiment, including:

- The need to preserve access to First World markets. The experiment with organic production was only one component of company strategy to produce goods that would be immune to 'green protectionism' in the post-GATT trading environment. However, organic production was so successful that it quickly became the most prominent expression of the strategy.
- The unfavourable prospects for bulk commodities in the world vegetable market. The takeover by H.J. Heinz Co. also heightened company strategies around the marketing of clean, green products.
- Organic production had the desirable quality of being able to add value and differentiate existing WFF products without any requirement for capital outlay in new processing facilities.
- An important factor was that WFF's established and valuable clients in Japan were increasingly interested in food safety, particularly in relation to chemical residues.
- Finally, WFF quickly established that organic produce could act as a 'keyhole product' which opened up business opportunities with previously disinterested clients that were subsequently interested in both organic and conventional produce. The success of WFF in using organic as a keyhole product strongly undermined the most prevalent objection to organic production that was and is raised in numerous food sectors in New Zealand; that organic products will raise negative questions about the qualities of conventional products from the same company, sector, or country. The WFF experience in Japan was that the opposite was true.

These factors combined to create a clear need, in the minds of WFF strategists, for environmentally enhanced products or products with superior food safety qualities. In Canterbury, the presence of long term organic growers, and the actual conversion of some long term WFF conventional suppliers to organic production in 1989 and 1990, encouraged the company to experiment with organic production as a solution to many of the above identified problems.

The first contracted crop of organic peas was harvested in February 1991, and in the next growing season WFF had contracted 18 organic growers to produce peas. Part of the combined harvest of these contracts was sold in Japan in 1992 and provided what one WFF manager described as the 'most lucrative consignment ever sold by Watties'. This success in 1992 was timely. In the same year, WFF was taken over and become one trading division of the new Heinz Wattie Ltd group (HWL [WFF marketed under the WFF name until the amalgamation of the business units in early 1997] WFF commissioned a study in 1992 to assess the viability of the organic pea project (see Scully 1992) and this identified that the main barrier to further development of organic production was a lack of growers. Compared to some other regions, the situation in Canterbury was more positive than most. In the first year of organic pea exporting, WFF found 18 established organic growers with experience in horticultural crops who they could contract to supply organic peas. This contrasts strongly with Gisborne, where similar efforts in the first year of production could only find a few organic growers with no background in producing the organic crop they wanted.

Despite the useful presence of established organic growers willing to cooperate with WFF's plans, a number of conventional growers would need to be converted to further build the programme. To

this end, WFF established the Grow Organics With Watties programme (GOWW). This was a promotional campaign with the following aims:

- Attract conventional growers to organic production
- Extend information about how to grow organically to growers
- Create legitimacy for organic production within the wider community.

Between the years 1992 and 1995, the WFF programme consolidated in the following ways:

- The number of growers increased until there were 50 suppliers nationally to the three WFF processing factories in Canterbury, Gisborne and Feilding by 1995.
- While the early stages of recruitment had concentrated on established organic growers, new entrants to organic production and larger conventional farmers, the company began to find that the supply of established organic growers was soon exhausted and every available grower was by then recruited. Of the new entrants, many of the ideologically committed new organic growers were enthusiastic but lacked basic horticultural skills with the necessary crops and struggled to produce consistent yields. The most successful group were their established conventional suppliers who converted to organics with a high level of existing skills in crop management and were able to adapt quickly to the requirements of an organic regime.
- WFF developed a strong relationship with BIO-GRO NZ as the certifier of their organic produce. WFF had the opportunity to develop links with other certifiers (Demeter, Codex) or develop their own 'organic' production system (as other companies attempted later), but instead built a relationship with one certifier. This relationship has had a major influence on the way which the entire organic industry has developed and will be discussed in detail later in this report. The rationale for the WFF/BIO-GRO NZ relationship was clear to WFF. It needed a credible certifier that was already working with most of the established organic growers and would be recognised in the Japanese market.
- Throughout this period, one of the consistent fears of some members of the organic movement was that large companies like WFF would 'water down' the standards for organic production. In fact, WFF consistently supported retaining a high standard, and even required that it growers not use one input that was 'restricted' but permissible under the BIO-GRO NZ standards. The reason for this is transparent. Unlike other companies operating in principally domestic markets (see Buck *et al.* 1997), WFF's organic product is exported and the penalties for any failure of the 'organic' qualities of this product were potentially enormous. Large companies in the USA can appropriate the term 'organic' in their labels without any real fear of sanction - except from that small group of highly informed and selective consumers. Essentially, in New Zealand, large exporters like WFF and Zespri faced huge penalties for any loss of organic product integrity.
- WFF did attempt to sell organic vegetables on the domestic market in 1996, but the market response was weak compared to potential demand overseas and activities in the domestic market were scaled down. By establishing a core group of growers producing high value organic crops for export in a broadacre rotations, WFF were laying the groundwork for other companies to procure organic products from these growers by utilising those aspects of their crop/stock rotation not devoted to WFF products. The most successful company to integrate itself with these new growers alongside WFF is Only Organic (NZ) Ltd. (OOL). OOL was established in 1995 and manufactures organic baby foods which utilise a range of ingredients. Some of these are products from the GOWW programme which have failed visual quality criteria but can be successfully processed into babyfood. Other babyfood ingredients come

from growers who are using WFF contracts for their 'bread and butter' and experimenting with other products that OOL can purchase. This synergy between WFF and OOL has been important for the Canterbury industry, although it must be stated that OOL also sources a wide range of fruit, dairy and meat ingredients from growers that have nothing to do with the WFF programme.

A further important feature of the Canterbury organic industry is the development of the domestic market. While Canterbury had some of the earliest organic food cooperatives, domestic consumption of organic food was still only modest in the early 1990s. In 1995, the number of local retailers of organic and health foods had increased and supermarkets were starting to carry organic products. Some retailers commented that the export programme may not have contributed many products directly onto the local market, but that by underwriting the financial viability of organic growers, many producers in Canterbury could now experiment with a wider range of organic products suitable for the domestic market. Since the surveying of Christchurch retailers in 1995, there is some evidence that strong growth has been taking place in the Christchurch organic market. In Saunders et al (1997), analysis of the domestic market showed strong growth throughout New Zealand and this was almost certainly true of the Christchurch area which has always had a reputation for organic consumption.

3.4 Conclusion

Canterbury has been advantaged by a number of factors in the development of organic food production. Historically, the organic agriculture movement has been strong in the region and provided skills and enthusiasm for organic production. Climatically and geographically, Canterbury is a region that is relatively advantageously placed for organic production compared to more temperate parts of New Zealand. The long term history of farming in Canterbury also predisposed farmers towards organics - both as a system which was not unfamiliar in the context of Canterbury farming, and as an alternative to the troubled state of conventional agriculture. The presence of strong support from educational institutions was another important bonus for the region. Consequently, it is no surprise that WFF made its first and largest move into organic production in this region and that these initial moves have led to strong growth in the export market for a number of companies, and an improving level of domestic consumption of organic produce in the Christchurch area.

CHAPTER FOUR

REGIONAL SUMMARY - BAY OF PLENTY

The Bay of Plenty region has featured prominently in the development of organic exporting. The activities of the New Zealand Kiwifruit Marketing Board (NZKMB), now split into Kiwifruit New Zealand and Zespri International Ltd., in promoting the development of organic kiwifruit production has been one of the success stories of organic development in New Zealand. Compared to kiwifruit production, other organic products like avocados and citrus form only a tiny minority of organic exports from the region. Therefore, any discussion of organic production in the Bay of Plenty effectively becomes a discussion of developments in the kiwifruit industry. This section will examine the following issues:

- Climate and geography
- History of kiwifruit production
- Organic kiwifruit exporting
- Kiwigreen and organic.

4.1 Geography and Climate

The geography of the Bay of Plenty is ideally suited to intensive horticultural production. It is sunny and sheltered from the predominantly westerly wind by a mountain range, and it is the largest lowland area in the North Island – comprising mainly low downland and river flats. The climate typically involves warm summers and mild winters with rainfall averaging between 1000-1500 mm per annum. The predominant soil types are volcanic.

The Bay of Plenty supports three major industries: pastoral (dairy, sheep), forestry, and intensive horticulture. While pastoral production was the most important historically, intensive horticultural production of kiwifruit has become central to the region's economy. The sheltered position of the Bay of Plenty, combined with beneficial rainfall and winter temperatures with chilling suitable to kiwifruit, renders the region ideal for the production of kiwifruit. A further bonus is that kiwifruit do not have many pest problems with only the leafroller and scale posing problems for growers.

4.2 History of Kiwifruit Production

While the history of production of kiwifruit for export has been comparatively recent – only taking off in the 1960s – this short length of time has been full of challenges for the industry. These will not be listed in detail, but some events were important in the development of organic kiwifruit production and will be discussed briefly at this point.

Since the emergence of kiwifruit as a ‘boom’ crop in the 1970s, there has been a continual struggle for control of exporting variously played out between growers, exporters, government appointed structures and processors/packhouses. A governing body for the industry – the New Zealand Kiwifruit Authority – was formed in 1977 and it licensed a certain number of exporting companies to deliver fruit to the market. This worked well while the industry was prosperous, but agricultural deregulation in 1984 affected the kiwifruit industry more negatively than almost any other agricultural sector with many growers ruined by highly leveraged properties and high interest rates combined with rapidly declining world prices and an inflated New Zealand dollar. This crisis peaked in 1988 when the government abolished export licenses and formed the New Zealand Kiwifruit Marketing Board (NZKMB) to attempt to steer the industry out of difficulty. The formation of the NZKMB during a period of crisis set the scene for development of organic production. While there was widespread opposition to anything like an organic product among board members, external circumstances kept forcing the board back towards an ‘environmentally-enhanced’, high value niche product. The two most important of these were the Italian Residue Crisis, and the Price Crash of 1992.

In 1991, Italy and New Zealand were engaged in fierce competition for European markets for kiwifruit. Italy was the largest kiwifruit producer in the world and New Zealand was the recently deposed market leader in terms of volume of trade. During 1991, European authorities began to invoke national Maximum Residue Levels (MRLs) for chemicals in kiwifruit and prosecuted suppliers of New Zealand kiwifruit which exceeded these levels. The board suffered immediate losses as fruit were impounded, but also became deeply concerned due to the possibility that ‘green protectionism’ would emerge as a major force in world trade.

A second, and more severe crisis was a price crash for kiwifruit in 1992, which effectively bankrupted the board and required urgent government intervention to map out the future direction of the industry. All but a few commentators agree that the causes of the generalised fruit price crash in Europe had little to do with the New Zealand kiwifruit industry, however, vocal critics of the board structure seized the opportunity to demand the dissolution of the board in favour of a free market for kiwifruit⁶. While the board survived, and statutory control of the industry was maintained, the 1992 price crash raised serious questions about the future direction of kiwifruit production and marketing.

Both these crises emphasised that the kiwifruit industry had a basic problem with its key product – conventionally produced Hayward variety kiwifruit. It was increasingly becoming a undifferentiated commodity with chemical residues that were vulnerable to ‘green protectionist’ measures emerging as the GATT Uruguay round neared its completion in 1995. The existence of the board structure enabled a coordinated response to emerge across the entire industry. Kiwifruit needed to be differentiated (both in terms of varieties and styles of production) and it needed to be fireproof from food safety concerns. Faced with a loss of market access the NZKMB recognised that kiwifruit being grown under trial conditions to test Integrated Pest Management systems (termed Kiwigreen) would successfully negotiate MRL barriers. Organic fruit also would achieve the same thing. Consequently, the board initiated the development of Kiwigreen production techniques with the intention of eventually converting the entire industry to either organic or Kiwigreen production. This was achieved in 1997.

⁶ This suggestion was not adopted by the government but the industry was subsequently significantly restructured – including the division of the NZKMB into Kiwifruit New Zealand (retaining statutory powers) and Zespri International Ltd. (concentrating on marketing).

4.3 The Development of Organic Production

Prior to 1990, organic production of kiwifruit proved to be very challenging. Early attempts to grow organically met with some difficulty, particularly in the control of scale insects. One high profile attempt to develop organic exporting in 1986 failed and at least one other committed pioneer of organics was forced to resort to conventional management to control scales and lost certification for several years. During this period, experimentation with pest management for both organic and Integrated Pest Management regimes was taking place on many kiwifruit orchards (including some organic orchards). By 1990, successful pest management strategies had been developed – thus overcoming one of the most important barriers to organic (and IPM) kiwifruit production.

The other major barrier was a strong institutional culture in the NZKA/NZKMB which was highly resistant to organic production on the grounds that it might compromise the legitimacy of conventionally produced kiwifruit. The important breakthrough came with successful lobbying by organic growers to have an organic kiwifruit pool operating for the 1990/91 growing season. The results for this pool were not promising in 1991-1993, with volumes being low and estimated yields varying greatly from actual fruit that qualified for Class One export standards. Despite these modest results, the whole industry had changed substantially due to the Italian Residue Crisis and the price crash of 1992. By 1994, the value of the conventional Hayward kiwifruit was under question, and a sudden upsurge in volumes of organic kiwifruit was welcomed. From 1994, organic volumes increased at a good rate, and even though the sudden arrival of increased quantities of organic fruit in 1994 depressed the organic premium, this quickly recovered despite continued increases in volume (see Table 8)

The total organic crop of organic kiwifruit would have exceeded one million trays in 1997 if it had not have been for adverse weather events which affected yields in all fruit.

Table 8
Production and Prices for Conventional and Organic Kiwifruit, 1991-1996

<i>Year</i>	<i>Trays Conventional/Kiwigreen</i>	<i>\$/Tray</i>	<i>Trays Organic</i>	<i>\$/Tray</i>
1991	59,848,342	\$6.08	13,069	\$10.45
1992	67,271,811	\$3.85	20,243	\$7.29
1993	54,782,552	\$4.18	51,014	\$7.03
1994	55,914,704	\$4.63	406,665	\$5.88
1995	58,743,401	\$4.22	620,095	\$6.23
1996	62,437,235	\$4.36	753,000	\$7.39

Source: Campbell et al. (1997)

The situation for contemporary organic producers differs markedly from that faced by the industry pioneers in the 1980s. Relative to 10 years ago, Zespri International Ltd. is strongly supportive of organic kiwifruit. The entire industry is now oriented towards producing an ‘environmentally enhanced’ product, and there is considerable R & D investment into reducing chemical usage.

Finally, it is clear that organic kiwifruit production provides less technical challenges than other organic product types like apples.

The development of organic exporting in the kiwifruit industry has highlighted the following issues:

- Producer board involvement was initially a large barrier and then a major influence working positively for organic development.
- Quality standards for organic fruit were not relaxed by the board when applied to the visual quality of organic fruit – against the wishes of many organic growers – and were eventually achieved by organic growers more successfully than had been anticipated.
- As a permanent orchard, kiwifruit uses supplements like compost and commercially-purchased fertiliser to maintain soil fertility rather than crop rotation. Kiwifruit growers tend not to produce other products from their orchards. Hence, kiwifruit has not provided a springboard for other organic crops in the same way that broadacre vegetable production in Canterbury has achieved.
- The economics of organic production in kiwifruit are very positive in comparison to conventional production. Two different sources of data clearly indicated that despite reduced yields, organic kiwifruit producers were experiencing a net return of between \$5500 and \$6500 per hectare above conventional/Kiwigreen producers.
- The storageability of organic kiwifruit is very good compared to conventional fruit. This makes organic kiwifruit more desirable for packhouses and provides an improved storage incentive payment for growers over and above the net premium.
- The market performance of organic kiwifruit is still buoyant, although the recent re-branding as Zespri and the conversion of the entire industry to either Kiwigreen or organic production will have important, and as yet unobservable, market effects.
- New growers entering organic production were able to access a comparatively abundant supply of information and instruction compared to other regions. The Bay of Plenty Polytechnic and NZKMB both engaged in technology transfer, while monthly discussion groups based around packhouses, and including visits to organic orchards became a significant feature of the industry.
- Grower representation became another important feature of organic kiwifruit production. Compared to other areas, organic kiwifruit growers became highly organised and also became involved in the policy making process in the board. While this did not always lead to harmonious relations between the parties, at least the organic growers were mobilised to protect their political interests.

While these factors clearly indicate that organic export development has had some very successful outcomes for both the growers and the industry, this was only achieved in tandem with the development of the Kiwigreen programme. This needs to be discussed in more detail.

4.4 Kiwigreen and Organics

The Kiwigreen programme was a response to the Italian Residue Crisis that drew upon years of prior R & D into systems of pest management that did not rely on ‘hard’ sprays. Kiwigreen was initially designed to produce kiwifruit using no broad spectrum insecticides, but pressure from some board members led to a compromise position which allowed some broad spectrum insecticides prior to bud burst. This was later modified to enable some broad spectrum spraying as long as it

was more than 130 days prior to harvest. The resulting fruit is designed to have chemical residues that are 5 per cent of the European MRL.

The second important aspect of Kiwigreen pest management is a move away from calendar spraying to targeted spraying only when need is established. Pest monitoring centres have been set up at packhouses and pest scouts (and orchardists) check the vines for levels of insect activity. Only when certain thresholds of pests (as against other insects) are reached can the approved 'soft' sprays be used.

While the Kiwigreen programme was revolutionary for conventional growers, it also had important benefits for organic growers, including:

- Kiwigreen pest management systems were easily adaptable for organic production. The pest monitoring techniques and 'soft' sprays used to control pests were acceptable (but in some case restricted) under the BIO-GRO NZ standards. Kiwigreen became a conduit for considerable industry investment into pest management R & D to become available to organic growers.
- There were important infrastructural benefits for organic growers. Packhouses became pest monitoring centres and these services became available for organic growers at a marginal rather than full cost. Organic producers in other commodities/crops have to bear the full costs of pest monitoring themselves. The other benefit was that packhouses became much more attuned to the grading of 'pests' in fruit rather than simply demanding a 'faunal desert' on fruit. Kiwigreen therefore upskilled packhouse grading staff in a way that benefited organic growers.
- Ideologically, Kiwigreen, by its very acceptance at a board level, declared that the mainstream conventional kiwifruit was potentially compromised in the market and therefore was less than adequate. Given that a continual argument against organic products is that they might compromise the mainstream product, Kiwigreen effectively legitimised the need for an alternative like organics
- Once the potential market conflict had diminished, Kiwigreen provided the basis for the new Zespri label to be vigorously promoted as environmentally enhanced, which gave a platform, for the first time, for organic kiwifruit to be broadly marketed by Zespri. Prior to this, there had been no marketing plan for organic fruit (any available fruit being immediately purchased and requiring no real marketing activity).

4.5 Conclusion

Organic kiwifruit production appears to be the most successful and apparently sustainable situation of export development encountered in this series of studies. Orchardists are able to convert their entire property to a high value product, they are supported by a massive industry infrastructure, their product is being marketed successfully, and they are generally participating in a wide range of networking activities which put them in touch with other organic growers and enable discussion and dissemination of new production techniques and technologies. Recent information suggests that this strong base for organic exporting in the kiwifruit industry is now attracting a large number of new growers who have registered with BIO-GRO NZ for conversion in the 1998 year. The fact that kiwifruit are considered to be one of the easiest products to grow organically also aids this development.

A more negative problem is that the success in the kiwifruit industry is not more closely integrated with other organic sectors. Unlike HWL developments in Canterbury (and Gisborne), where rotational production systems provide opportunities for other products and industries to become involved, the success of kiwifruit is difficult to integrate with parties outside the industry itself⁷. While kiwifruit industry representatives have become prominent in supporting organic production nationally, and with fees and levies from the industry providing a considerable portion of BIO-GRO NZ's income, most of the benefits are accruing within only one (highly successful) industry sector. Further, kiwifruit look likely to set the precedent for likely future changes in premiums as large numbers of growers in an export industry start to produce organically. Many industry participants consider that the point at which markets will begin to be saturated with supplies of organic New Zealand kiwifruit is still very distant.

⁷ An exception to this can be seen in the economies of scale now operating in inputs for kiwifruit like organic fertiliser and Bt sprays. These are now more accessible and able to be purchased more cheaply by other organic growers in kiwifruit producing regions.

CHAPTER FIVE

REGIONAL SUMMARY - GISBORNE

The Gisborne case study was the third regional study in which there was a significant volume of organic exports. As a case it has similarities to Canterbury in that HWL exports organic vegetable products from both regions and has been involved in developing organic production. However, Gisborne district has unique features including: a high per cent age of Maori in its population and a history of development of organic production where there was no significant domestic organic industry before the growth of organic exports. The main objective then was to examine whether these unique factors have had an effect on the development of organic exporting. In order to address this objective, interviews were conducted with 25 stakeholders in the local organic industry, and 27 interviews were conducted with both organic and conventional farmers in order to develop a decision tree which showed why they did or did not grow organic products.

5.1 Environmental and Social Context

Gisborne district is isolated and this makes for high transport costs and a degree of progressiveness among growers who are keen to try new systems of production. The district has growing conditions well suited to organic crops, both climatically and in terms of soil. There is high unemployment, a high proportion of Maori in the population, and a growing interest by Maori in horticultural production. Other social factors influencing development are the migration of lifestylers into the area and the presence of international tourists who have decided to live in New Zealand. Finally, there has been ongoing restructuring of agriculture including a shift away from pastoral agriculture and increasing horticultural production which embraces a wide range of crops. Changes within horticulture in recent times include the rise of small-scale ventures, and growth in value-added and niche crops.

5.2 Development of Organic Horticulture

Heinz-Wattie Ltd. (HWL) established exporting of organic sweet corn in 1991, without the presence of any significant levels of domestic organic production, because it was essential to its marketing strategy in Japan which required organic corn in frozen mixes. To obtain product, HWL worked with a few organic growers initially, then conventional growers (who obtained good yields), and Maori land trusts. HWL used the Grow Organic with Watties campaign, as outlined for Canterbury above, to promote and disseminate ideas about organic production, including the presence of premiums. After a slow start, numbers of organic growers increased as one in particular grew a large area and provided legitimacy to organic corn, and because HWL promoted new technology for weed control.

To attract conventional growers to organic corn production requires that the methods of organic sweet corn production must address soil fertility, weed control and pest management issues. The need for a green manure crop to hold soil fertility has been met, at least to date, by the use of lupin and mustard, and there is potential for a sustainable rotation using all organic crops – corn, peas, squash, winter green crop. Weed control has been obtained by mechanical means rather than chemical means, and pest control is achieved for most insects by the use of organically acceptable pesticides, biological controls and crop rotations. The use of organic peas as part of the crop rotation is being examined and some growers are growing organic squash using techniques developed for organic corn.

There has been a lack of domestic demand for organic produce in Gisborne District. Since 1994 the presence of an organic group suggests that there may be latent demand for organic products but this group began after the onset of exporting of organic crops. Exporting of organic crops has had a positive effect on the domestic developments.

5.3 Emerging Issues

While the outlook for organic production is presently favourable, there is some evidence that indicates that it may not be immune to problems typical of conventional production. One factor has been the presence of other firms involved with exporting organic crops, including some that are complementary to HWL and some that are in opposition to it. Organic squash is an important export crop to Japan and while price premiums are higher than that for organic corn the other costs of production make the gross margins similar. Squash and corn provide growers with rotation options and options for whom they sell to in ways that benefit all parties. However, the growth of a new market for retort pouch organic corn has allowed Sunrise Coast to compete for organic growers but, unlike the case for HWL, it does not have to bear the cost of training growers. Growers now have more choice and possibly a better bargaining position but at a cost of slightly reduced level of trust and cooperation between growers and processors. This situation raises the possibility that competition for organic growers may cause instabilities in the structure of the Gisborne industry.

Another factor in Gisborne developments is the presence of SunGreen squash and sweetcorn in which Sunrise Coast has established its own system of certifying the products as organically grown for the Japanese market, using MAFQual as the independent certifying agency, a move that legitimises the label as ‘government certified’ with consumers in Japan. The system covers one season at a time, and is not so rigorous compared to BIO-GRO NZ, by not requiring permanent commitment to organic production. This example raised the possibility that there may in future be a range of organic labels. There are four main problems here. First, New Zealand organic production already has some difficulty accessing markets due to the absence of government approved standards. If companies proliferate the number of labels claiming to be organic then even the international credibility of BIO-GRO NZ could be compromised. Second, there is considerable doubt as to whether consumers adhering to the kinds of organic standard approved by the International Federation of Organic Agriculture Movements (IFOAM) would recognise systems like SunGreen as being organic. Third, BIO-GRO NZ may lose its claim as the main arbiter of organic production techniques thereby creating uncertainty about the process of converting to organic production. Finally, it increases the chance that testing products may find residues and this finding

would have adverse repercussions for all organic labels. Behind these problems has been MAF's unwillingness to take a lead in these developments, although the SunGreen situation has prompted action by MAF Regulatory Authority to act in recognising a national standard⁸.

Another emerging issue is the concerns that growers have about the organic industry. These relate mostly to sweet corn growers but they apply in principle to all organic growers. Growers are concerned that the returns on their investment in organic production are relatively poor because input costs are high and there are technical requirements and complexities that are costly. For these growers the higher premiums do not assuage the problems of bad years or the increased stress levels caused by greater uncertainty. Further, the variability among organic sweet corn growers is high, inter-season variability is high, and there are problems with using average yield data to compare production levels across seasons and between growers. Another recent factor in grower concerns was the decline in prices paid for both conventional and organic sweet corn, a move that was applied equally to both types of corn and which caused considerable concern to growers and lowered their loyalty to HWL.

Another emergent issue is the development of grower involvement in processing and distribution, where four larger growers combined to form Kiwi Organics to gain scale economies and leverage in the organic market. The group has diversified into organic linseed and kumara.

There are some long-term issues for the Gisborne District. To date, the relations with BIO-GRO NZ have been good, perhaps reflecting the newness of organic production there. However, there may be tension in future as some growers seek premiums rather than long term sustainability of their soil fertility, and some growers claim that they do not wish to convert all of their properties to organic production in the long term.

Another emergent issue is the presence of some emergent organic industries, namely: deer, wine and 'exotic' fruit. Deer farming has not been supported by Game Industry Board developing an export line for organic deer, and there are technical difficulties in harvesting velvet that meets both BIO-GRO NZ and MAF standards. Consequently, the deer farmers have not been able to sustain their early interest in certified organic production. There are two growers of organic grapes who produce wine; both believe that organic production is possible but not in the early stages of establishing an orchard. They perceive that there is little support from the Wine Institute and like the deer farmers their enterprise has not been supported by the infrastructure in which they produce. Growers of exotic fruit that have production methods close to organic methods are also now growing or considering growing these fruits organically, and there is the Eco2000 project being developed in Gisborne as part of its preparation for millennial celebrations.

Finally, there are two factors inhibiting the development of organic production in Gisborne: the lack of a research centre to promote and conduct local research, and the relative lack of substantial areas of flat arable land in single title. The latter means that growers have to expand using leased land for which it is difficult to gain BIO-GRO NZ certification. It is also difficult for the trustees of Maori land in multiple ownership to arrange to lease their properties. Current strategies for incorporating Maori land into organic production have emphasised leasing arrangements. These are undesirable in

⁸ At the time of writing, this situation was under negotiation between multiple parties in the organic industry and MAF RA, and some resolution should appear in the near future.

the long term as a form of organic production and can only be seen as a 'stepping stone' to independent organic production by Maori incorporates.

5.4 Conclusion

Organic production has evolved quickly in Gisborne (from 10 ha in 1991 to 400 ha in 1997) because the economic problems in the district have meant that people are willing to attempt new solutions to those problems. Restructuring of agriculture away from pastoralism to horticulture, and to niche production, has also been important, as has the involvement of HWL. The longer-term success will require local diversification and synergies among a number of processors. To date these developments mean that growers have a variety of outlets for their crops, but this competition may have counter-productive outcomes. Organic farming has not involved many Maori to date and the structural impediments on the use of their land will need to be resolved before land use innovations can be implemented. The terra nullius state of Gisborne District has meant that there is a different range of attitudes to organic production than in the other case study areas, particularly with respect the role of premiums which are important for some of the larger scale growers who have considerable influence. These attitudes may mean that they will have difficulties with BIO-GRO NZ in future. These findings in Gisborne are important as they provide some evidence of how organic exporting can develop in a region with little prior history of organic production. Some of the problems encountered in Gisborne may be repeated if/when organic production is considered in other regions lacking any history of organic production.

CHAPTER SIX

REGIONAL SUMMARY - NELSON

The Nelson case study provides the basis for important comparisons to the other case studies for two main reasons. First, the growers there have generally been oriented to the domestic market and have been motivated to grow organic products predominantly by philosophical concerns. Second, there is not the same level of influence of organic exporting - typically by large-scale organisations like HWL or Zespri. For these reasons, the Nelson case study serves as a control against which the other three case studies can be compared--they all had significant organic exporting propelled by organisations supporting organic exports. An important issue, then, is whether export developments in other regions have, or potentially will have, a negative effect on organic producers in Nelson. This issue relates to an ongoing concern by the New Zealand organic agriculture movement that exporting may undermine the production of organic food for the domestic market.

6.1 Environmental and Social Context

Important background information is that Nelson is a significant horticultural area--the third largest by value in New Zealand. Many horticultural crops are produced, with recent increases in the area of apples, berryfruit, and crops and vegetables. While 11 per cent of the nation's organic growers are located in Nelson, only four per cent of the country's certified land is in the area.

The region's suitability for horticultural production has supported organic production but so too have historical and demographic factors. For example, some immigrants from Germany have become horticultural producers and have preferred to produce organically, and lifestyle, retirees and alternative farmers have a predisposition to farm organically. The earliest significant development organic production for the Nelson market was by the Riverside Community soon after World War II which integrated Methodist and Pacifist ideals with primary production. Another background factor has been tourism which has provided both discriminating consumers but also some producers as tourists have decided to settle in New Zealand. These early developments connected producers to consumers via informal links whereby surplus products were sold or bartered to friends and food cooperatives. Later developments included dedicated health food shops and more recently a producers' group which cooperatively coordinates production and distribution.

6.2 Attitudes of Organic Growers

The attitudes of organic growers in Nelson were dominated by lifestyle concerns, particularly the social and environmental aspects of their operation. Many growers were small-scale producers pursuing a 'green' lifestyle, but not necessary precluding a business attitude. Generally, the growers concerns were to keep production at a small scale, to avoid monoculture, to avoid debt, to use WWOOFer labour and to achieve self sufficiency. They evinced little interest in obtaining premiums

for organic production per se, but generally they supported the growth of organic exporting and large-company involvement in organic production and distribution. They saw these as adding legitimacy to both production and consumption of organic food. Further, they did not fear a takeover by the large companies because the potential return from the domestic market was too small to attract their interest, and because they believed that there were niche markets that they could always exploit.

Organic growers in Nelson, while having positive comments about BIO-GRO NZ, have been concerned that the certifying organisation did not always cater well to their small-scale level of production which made payment of registration fees very difficult. In response, BIO-GRO NZ introduced in 1997 a small grower scheme that eased the financial burden by cooperatively organising certification thereby substantially reducing the costs of certification for growers and the time demands on inspectors.

Despite grower concerns for environmental and social issues, and their small-scale orientation, there has been considerable expansion of, and dynamism within, organic production in Nelson. Local consumption of organic food has increased as has distribution to other markets in the South Island. There has been a considerable increase in domestic demand in recent years, which they have met, possibly because the large growers and processors have focused on exporting. Growth has been supported by the development of dedicated organic shops in many cities (including some in the North Island), increased interest from supermarkets, and by improvements in distribution networks. In response, growers have developed profitable niche markets and grown new crops or crop mixes to contribute to the growth in the domestic organic market.

6.3 Development of Export Markets

Despite the predominance of organic production for the domestic market, there is an emergent export market for specialty products like organic bee pollen and honey, wine, and hops, and for organic kiwifruit, pears and apples. For kiwifruit, the few lifestyle producers will soon be supplemented significantly by one large-scale grower. For apples, there is more organic production but there are greater difficulties in production compared to kiwifruit. Further, the New Zealand Apple and Pear Marketing Board has supported Integrated Fruit Production (IFP) more than organic production, and there are uncertainties in the minds of growers about the Board's commitment to organic production. However, there remains the possibility that increasing use of IFP will encourage growers to consider organic production. In addition, deregulation of the domestic apple market may encourage organic production because dumping of export rejects is expected to reduce profitability for small, domestic-oriented growers, thereby making them seek better returns from organic apples. Finally, another important factor working to increase organic exporting is the presence of Frucor, an apple processing company attached to ENZA, which is considering organic apple processing.

The export of the organic niche crops is based on a more concerted effort than has occurred in the kiwifruit or pipfruit sectors. Bee products are exported by a few enterprising beekeepers, despite their difficulties of working with BIO-GRO NZ who were new to certifying bee products and required, in the minds of the beekeepers, rather rigorous standards. Organic wine is produced by a few growers who have not had significant difficulties with BIO-GRO NZ. They believe there are

significant premiums for exports but not for domestic sales. There is also potential growth for organic hop exports with one grower, supported by the Hop Marketing Board, establishing the basis for strong export growth in the medium term.

6.4 Conclusion

Nelson was chosen as a control case study in order to compare the other case study regions with one where there was no significant level of organic exporting. Our expectation that the level of organic production for the domestic market would be static was found to be incorrect: there has been thriving development in this sector with gradual solidification of important niche markets, and distribution networks, within New Zealand. Nelson organic growers have expanded their production to meet growing demand while maintaining a commitment to social and environmental aspects of production. Thus, the Nelson growers are both committed to alternative ideologies and to seeking above average or premium returns for their organic produce. In this way, the pattern to date has been development of a domestic organic industry parallel to the development of an export organic industry, with the latter having no obvious adverse effect on the farmer. Organic growers may be more amenable to exporting than we anticipated, the potential for exports being limited by the absence of institutional support. There is considerable potential for organic apple exports to increase if technical problems can be addressed and marketing support consolidated.

CHAPTER SEVEN

GROWER DECISION MAKING ABOUT CONVERSION TO ORGANIC PRODUCTION

Throughout this research programme, industry participants have identified the need to convert more growers to organic production. This was seen as a major restraint on the further development of organic agriculture. Motivations for such opinions varied from businesses establishing an export programme (who found that there was vastly insufficient supply to meet market demand) to committed long term organic agriculturalists who argued that their task would not be complete until every New Zealand farm was organic. Thus, for a variety of reasons, the actual point of decision when farmers decide whether to attempt organic production or remain in conventional production is one of the most crucial issues facing the industry. Consequently, in each case study region the decision tree method was used to specifically question growers about the decisions they made in relation to organic production.

In each case study area farmers and growers were interviewed in order to understand their approach to farming and great care was taken to ensure that farmers were able to tell us why they grew organic products or why they did not grow organic products. They were approached in a way that ensured that they were able to tell us why they did what they did. For the Canterbury and Bay of Plenty case study areas, large samples of over forty farmers were used containing both organic and conventional farmers. The results were presented in decision trees that identified elimination factors, principal reasons and main constraints to action. Generally, the decision trees were similar in the first two case study areas and the task for the third study in Gisborne was to check that similar results were also found there. The sample of 27 farmers produced results that were similar to the earlier studies with only slight differences that were accountable in terms of local factors. Because the decision trees in the first three case studies were similar it was not so important to interview such a wide range of farmers in Nelson and the 21 organic growers interviewed there in order to learn about developments generally were the only farmers interviewed. Table 1 shows the number and types of farmers interviewed in each case study area.

Table 9
Numbers and Types of Farmers Interviewed

	<i>Organic</i>	<i>Conventional</i>	<i>Total</i>
Canterbury	16	27	43
Bay of Plenty	12	12	24
Gisborne	15	7	22
Nelson/Golden Bay	19	0	19
Total	62	46	108

Interviews were analysed to identify elimination factors, motivations and constraints on action. The results were presented as decision trees which showed decision criteria in a hierarchical pattern. The criteria are connected by lines that indicate how a sequence of criteria apply to particular groups and lead to particular outcomes. It is not necessary to repeat the decision trees here and only the key features are noted on this summary. Similarly, it is not essential to focus on the numbers of farmers who expressed particular criteria.

7.1 The General Pattern of Results Across All Case Study Areas and Policy Implications

For most of the farmers interviewed there were five elimination criteria which, if relevant, meant that they did not seriously consider organic production. They were:

- Don't know much about organic farming; never really considered it.
- Well satisfied with present farming system and like or need high yields and/or tidy appearance.
- Well satisfied with present low input system and not considered organic production (not against it either).
- Organic farming is not technically or financially viable but never really considered it.
- Organic farming is not sustainable.

Generally, these elimination criteria were only mentioned by a small number of farmers but their use shows that some farmers were not thinking significantly about organic farming, in fact, their beliefs are such that they are drawn away from seriously considering organic farming.

Most of the farmers interviewed went on to consider organic farming and the results highlight five main motivations that, if applicable, do mean that the farmer grows organic products if possible. The main motivations were:

- Adhere to an organic philosophy and/or concerned with the environment.
- Interest in organic farming as a consumer; don't want chemicals in food.
- Your self or member of family or staff or pet, experienced ill health from chemicals.
- Attracted to premiums or need higher valued products.
- Experienced basic problems with conventional production.

The results show that farmers were interested in organic farming for a variety of reasons. First, there were three motivations that ranged from the general to the particular in terms of the scope of their beliefs about the environment. The reasons given can be characterised as typical of current views on food production and environmental problems, common in contemporary discourse about organic farming. Second, some farmers were motivated by premiums. Third, some farmers were reacting to their experience with conventional production, either responding to basic problems, having an antipathy to chemicals, or having a concern about the soil. All these farmers grew organic products unless constrained in some way. However, farmers not directly motivated could get into organic farming by considering it closely, and four criteria were relevant :

- Use chemicals but see them as expensive and/or of dubious value; prefer not to use them; don't like sprays.
- Concerned with soil or with increasing humus level.
- Market may demand organic products.
- Learned that don't have to spray so much.

These were all factors that occurred for existing farmers who were thoughtful about their farming. If they were applicable then the farmers seriously considered organic farming. In their consideration of organic farming two criteria were predominant:

- Organic farming is not technically feasible.
- Organic farming production is not economic.

Most of the farmers getting to this point considered that organic production was neither technically or financially feasible so they did not grow organic products.

Finally, the decision trees showed that for those who were motivated to grow organic products there were sometimes constraints that prevented them from doing it. Among these were:

- Present occupation takes too much time.
- Not yet found an organic crop.
- Family commitments and mortgage prevent change.

The decision trees also showed the degree of commitment that organic farmers had to organic farming. When asked about their response to a possible decrease in premiums in future some said that they would continue anyway ("Committed Organic") while some said they would change to conventional production ("Pragmatic Organic").

The decision trees also showed another interesting finding. Farmers seem to hold to a familiar view and then use that view to interpret facts relevant to farming. Thus, conventional farmers thought that their system was the most profitable and judged organic production to be less profitable without specifically examining gross margin data.

The main point of these results is that farmers come to organic farming, or its consideration as an alternative, from a variety of motivations. The decision trees show that at least nine motivations were involved. Looking for themes among these nine we observe that they cluster into four groups relating to:

- Ideas, ranging from the general (adherence to organic philosophy) to the specific (want to avoid ill health).
- Money, including premiums or market demand
- Concerns with conventional farming (have problems, want to use fewer chemicals, or concerned about soil) for which organic production provided a solution
- Halo effect, i.e. learned from other sources – like Kiwigreen - that you do not need to spray so much.

Each cluster has implications for policy. Policy to encourage organic farming and increase the number of organic farms should focus on attitudes, finances and technology. Information about organic farming could be provided to farmers who have never considered it. Information about conventional farming could encourage conventional farmers to reconsider their use of chemicals in way that lead them to grow organic products. Accurate information about the profitability and gross margins of organic farming would motivate more farmers to grow organic products by addressing their concerns about financial viability of organic production. Development of technology and techniques of organic production will influence farmers who perceive technical problems with organic production.

7.2 Some Decision Making Characteristics Distinctive to Particular Case Study Regions

In Canterbury, there were a number of smallholders included in the sample and they had distinctive decision criteria that did not occur in the other regions. For example, it was this group that often wanted to grow organic products but were constrained by lack of time or farm too small, for example. Also, the Canterbury decision tree showed that it was typically full-time farmers who were affected by elimination factors or who were considering organic farming. In the discussion of the results the point was made that organic farming was drawing on old-style farming techniques to some extent and that the attitude change needed to implement organic production was not one of merely adopting a technique but one of changing one's whole approach to farming. Finally, it was noted that there had been a growing acceptance of organic farming amongst farmers in general.

In Bay of Plenty, while the five main motivations for growing organic products occurred, there were some growers who said that the Kiwigreen programme was important in their decision making by way of showing them how they could go on to grow organically. Further, the presence of Kiwigreen meant that the organic alternative was more obvious and many Kiwigreen growers had considered organic production. Also, conventional growers were modifying their crop management in the light of alternative production systems being applied and demonstrated nearby. In effect, there was halo effect: organic and Kiwigreen techniques were being borrowed and applied even if not with as much success as their neighbours. Finally, about one quarter of all growers interviewed had experienced ill health due to chemicals but only for two did this influence their decision making decisively.

The Gisborne study introduced two additional criteria that made farmers consider organic production. They were that 'market may demand organic product' and 'learned that don't have to spray so much'. The presence of other organic crops in the area had served to make alternatives more noticeable and accessible. There was little sign of concern about interest in organic farming as a consumer with only one farmer identifying with this criterion, and this result suggested that there was an insignificant local market for organic produce. There was also little experience of ill health from chemicals suggesting, perhaps, that there had been relatively less use of chemicals in the area.

The Nelson/Golden Bay study reflected the predominance of farmers motivated by social and environmental concerns. This was not to say, however, that the desire to run a profitable enterprise was absent from these growers' decisions. No growers set out to go bankrupt, and many philosophically committed growers had no hesitation in seeking profits from selling their produce.

7.3 Conclusion

There has been a popular misconception in relation to organic production, that the newly converted conventional growers were purely motivated by the desire for premiums and that long-term growers are not interested in profit, preferring the satisfaction of lifestyle needs. This popular idea has been promulgated by a variety of parties, ranging from policymakers committed to neo-liberalism who saw ‘price signals’ as the *only* motivation worth pursuing, to some long-term organics supporters who derided new ex-conventional growers as ‘tainted’ by their desire for profit. The results from this research programme undermine these prejudices. It is true that many of the ex-conventional growers entered organics with economic concerns uppermost in their minds. These included a desire to:

- Innovate to stay ahead of declining prices in bulk commodity markets
- Escape from a collapsing economic system in conventional farming (‘I’m going broke anyway, so I might as well try organics’)
- Try something new that might cover costs, but might possibly also make good profits.

However, few of these growers saw economic concerns as their only reason for converting. Given the premiums achieved by many organic growers, if the neo-liberal ‘price signal’ mechanism was all that was operating then surely vastly more growers would have changed over. Instead, the idea of financial security through supplying niche export markets was a *necessary* but not usually a *sufficient* factor for converting to organics. For that minority of the total group of conventional growers who might potentially convert to organic production, those growers who did convert in search of higher premiums were usually also motivated by concerns about the long-term environmental viability of conventional farming, or the health effects of agri-chemicals. Furthermore, one of the most significant dynamics emerging in the exporting regions, was the ‘progressive conversion’ of ex-conventional growers who tended to enter organics in search of economic gains, but progressively became more attracted and committed to the wider environmental and health issues in organic production. This dynamic occurred in both organic kiwifruit and Kiwigreen production as familiarity with new production techniques built confidence in the overall system. There are, of course, some growers who have remained steadfastly pragmatic and un-philosophically committed, and they will encounter increasing difficulty in obtaining certification if some degree of progressive conversion does not occur.

The popular misconception referred to above is related to another: that growers are either ‘modern’, rational farmers or ‘sandal-wearing’ hippies. This polarity has had some currency, especially in the past, but is an oversimplification. The decision tree results show that many conventional farmers are well aware of the problems with conventional production and would prefer not to use chemicals for example. Many seriously considered organic production but believe that it is not technically or economically viable.

Having made these statements about ex-conventional growers, some important qualifiers need to be added in regard to the popular stereotype of long-term organic growers as being disinterested in profits or premiums. As the Nelson case study clearly showed, people who are interested in lifestyle can also be interested in financial security or profit. In fact, the popular stereotype which distinguished between long-term and new converts on the basis of economic pragmatism may have influenced the entire data gathering process for this aspect of the programme. While being

interviewed, many ex-conventional growers were painfully conscious of being labelled as 'economic pragmatists' and sometimes tried to obscure some of their motivations. At the same time, some long-term organic growers had found the development of the export market to be welcome, partly because it gave some legitimacy to their desire to make money out of organic production.

In conclusion, the popular stereotype about pragmatists and lifestylers has obscured the real nature of growers' decisions about whether or not to pursue organic production. This research shows that decisions were complex and that the distinction between lifestylers and pragmatists was very blurry in places. Similarly, growers' motivations often changed with time (both for pragmatists and lifestylers) and that many pragmatic converts should be given several years to allow time for 'progressive conversion' to take place.

CHAPTER EIGHT

WHAT CAN THIS RESEARCH PROGRAMME TELL US ABOUT ORGANIC PRODUCTION?

In the following section we provide detailed answers to a set of nine questions often asked about organic production, marketing, the roles of companies and the state, and certification. These questions are not exhaustive but they cover major issues. They are designed to present some of our major findings across the four case studies in a simple and practical way. In the answers will be found important points that would inform the development of policy for government, private companies or other agencies. They form the basis of the next section which move on to consider the preconditions for organic exporting and the factors influencing its development.

8.1 Is Organic Production Technically Feasible?

While this research programme had limited engagement with specific technical issues in organic production, the broad historical trends concerning ‘attitudes’ towards technical viability were clearly evident.

During the 1980s, when organic agriculture was being touted as a potential future option for New Zealand agriculture (including some improbable supporters like senior members of NZ Federated Farmers and MAF), there was resistance from many quarters. Media comment on organic agriculture (which escalated considerably between 1989 and 1991) ranged from highly supportive to extremely negative. The most consistent negative comments were made by agricultural scientists who argued that organic production would be disastrous because it was ‘not technically feasible’ to produce organically. Since 1992/93, this element of discourse in the media has vastly decreased and it is now uncommon to hear this statement made. The reasons for this decrease in negative comments are threefold:

- First, at that earlier time, many agricultural scientists were unfamiliar with the specificities of organic production either confusing it with ‘closed systems’ like permaculture which did not allow for off-farm inputs, or suggesting that organic farming involved no active management of properties at all (farming by default) as typified by one Massey University ‘experiment’ where an apparently ‘organic’ trial orchard plot was simply locked up for the summer.
- A second and more compelling reason was that since 1991, several industry sectors have clearly established the technical viability of organic production in a number of areas, including: processed vegetables, kiwifruit, squash, wine, dairy, livestock, honey, and recently apples. Growing familiarity with organic production and actual demonstration have effectively closed the debate for these products.
- A third reason is that much of more extreme position-taking adopted by some devotees of organic production has declined. This has helped decrease open antagonism between agricultural scientists and the organic movement.

Not all technical issues have been resolved and, for example, questions still remain over the viability of rotational systems which require a greater number of organic products to ensure long term success. The increased level of R & D by private companies, and the emergence of a considerable body of research with applicability to organic production (see Saunders et al. 1997) has created an environment where technical research and organic aspirations can be more usefully combined than has been the case during the earlier more antagonistic phase of the industry.

8.2 Is Organic Food Poor in Quality?

Some people believe that organic food is poor in its visual and size qualities. Devotees of the organic agriculture movement counter this view by arguing that organic food, if it has these qualities, compensates by having high 'food safety' and 'environmentally friendly' qualities. The emergence of export markets has created a situation in which organic growers have been forced to meet *both* forms of quality criteria. In a few sectors like kiwifruit and process vegetables, this aim has been relatively successfully achieved, either through technical innovation in production, or through processing and packaging systems. While this has been achieved in some sectors, others – like apples – face major quality challenges in overcoming difficulties like black spot. The most likely solution will be in the cultivation of resistant varieties, which will take a number of years at best. In the domestic market, the visual and size qualities of organic produce are highly variable, with some early organic growers consistently producing high quality produce while others produce at a much poorer standard. This situation will also be influenced in the future by an increasing level of export 'rejects' being sold in the local market which will tend to be the more visually poor product.

8.3 Are All Organic Growers 'Sandal Wearing' Hippies or Migrants?

This research programme has been particularly interested in the way in which perceptions have changed about the organic industry. A popular conception of organic production as the domain of alternative lifestyles has been prevalent among many conventional farmers (and others), and is the subject of some ironic self-reflection by many organic growers. It is true that the early pioneers of organic production in New Zealand were often members of marginal social groups in rural areas: 'hippies', 'environmentalists', European migrants, and urban refugees. These groups have played a crucial role in: developing organic techniques, promoting organic agriculture as an alternative (although many conventional producers found this a distinct disincentive), and bringing to New Zealand a clearer picture of how many First World consumers were desiring environmentally enhanced food products. In fact, there has been an 'organic diaspora', which has provided the basis of an ideological challenge to existing farming practices. While representatives of these groups still remain in the industry (often in the domestic market) and are proud of their alternative stance, there has been a progressive 'normalisation' of the overall image of organic agriculture in New Zealand. In the new exporting provinces, some ex-conventional farmers have developed a new image for themselves as organic growers, describing themselves as 'innovators, risk takers, skilled producers, independent minded', but otherwise 'typical New Zealand producers'. This new image has been aggressively displayed in some regions. One disgruntled non-organic grower in the Bay of Plenty described it in these terms: 'it's like a new religion...they're making money *and* they're

saving the world...’. Some chagrin has also been expressed by long term members of the organic agriculture movement who have bemoaned the arrival of the ‘suits and cellphones’ in the industry. The progressive mainstreaming of organic production has, however, been achieved only with the loss of much of the broader organic vision in the new ex-conventional adherents. While many new ex-conventional converts have experienced ‘progressive conversion’ to wider organic ideals this is not a universal trend, and future conflict between ‘committed’ and ‘pragmatic’ growers will be an important issue for the industry.

8.4 Will Organic Products Undermine New Zealand’s Conventional Products in the Marketplace?

A major fear by many industry leaders is that by developing an organic product, the mainstream conventionally-produced products in an industry will be compromised through comparison. New Zealand’s much vaunted ‘clean green’ image must therefore be defended from products that might look a little too green and thereby call into question the food safety attributes of conventional products. This has been a major reason for some industries refusing to foster organic development.

This research programme has identified three things which are important in understanding this issue. First, at the present point in time organic and conventional products tend to be marketed through different channels so comparisons tend not to occur. Second, HWL experienced the direct opposite to this common fear when marketing organic products in Japan. By offering an organic product, and directly linking it with conventional products, HWL was able to differentiate *all* its products from those of competitors. A ‘market halo’ effect was in operation, in which the commitment of a company to ‘food safety’ through developing organic food lines was seen as indicating positive ‘food safety’ attributes in the same company’s conventional products. Finally, the major threat to the clean green image of New Zealand’s conventional products does not come from organic food. In an era of increasing green protectionism in First World markets, there is a real risk that the food safety attributes of New Zealand’s conventional products will be compromised. Those organisations like Zespri which have developed an organic byline, found this to be of considerable assistance when developing the Kiwigreen system. Likewise, HWL found that one of the major benefits of organic production was in developing techniques that could then be mainstreamed to improve the food safety attributes of their conventional products.

In conclusion, the long term future of conventional products in key markets is uncertain, and their ‘food safety’ attributes will increasingly be called into question. These wider trends in world trade suggest that, in the future, IPM or low-input systems will be the bare minimum allowed into key markets. Consequently, the question of ‘organic undermining conventional’ will be irrelevant, and issues of the potential market relationship between organic and IPM/low input systems will be much more critical. This programme does not yet have enough information on the performance of IPM systems in the world market to make predictions as the future configuration of that relationship.

8.5 Will Intermediate Systems Like Kiwigreen Assist or Detract from Organic Production?

There is no doubt that in the last three years, several horticultural sectors have become committed to a 'two-tier' development path – including a top tier of organic product and a middle tier of 'low-input' or IPM-managed products. This has raised serious concerns for many long-term adherents of organic agriculture, who argue that in trying to find solutions to the problems of conventional agriculture, New Zealand will simply adopt a compromise position and organic agriculture will go into decline. The first industry to fully adopt a two tier system was the kiwifruit industry. This research programme demonstrated that in the short term, Kiwigreen had provided considerable benefits for organic production, including:

- Industry investment into techniques suitable for both Kiwigreen and organics took place on a large scale. These investments would have been far less likely if they only had applicability to organic producers - less than 3 per cent of kiwifruit growers.
- The development of pest scouting and pest monitoring centres were positive for organic growers who could then access these facilities. Similarly, packhouses became more accustomed to the need to grade fruit with sensitivity towards which insects were pests and which were harmless leading to lower rejection rates for organic fruit.
- The development of Kiwigreen moved the industry's leadership away from one persistent ideological barrier to supporting organics, namely, the fear that organic fruit would undermine the image of conventional fruit in the market. The development of Kiwigreen signalled that the future status of conventionally produced kiwifruit was already compromised.
- Further to this point, by converting to Kiwigreen, the industry finally allowed organic fruit to be openly marketed, due to the resolution of this ideological barrier.
- Kiwigreen acted as a stepping stone for producers to convert to organic production. Most producers cited pest control and soil fertility as their major concerns when considering converting to organic production. Kiwigreen helped resolve concerns over pest control.

The situation in the kiwifruit industry provides us with the only example to date of what happens when a low-input or IPM system is adopted alongside an organic system. In the short term, this development signalled a number of major benefits for organic production. The long term effects are not yet able to be ascertained from results within this research programme.

8.6 What Role Have Large Companies/Boards/Processors Played in Developing Organic Exporting?

One major impediment to expanding organic agriculture was the very small level of demand for organic food in the New Zealand market. The two most commonly advocated strategies for overcoming this in the early 1990s were: 1) market education of New Zealanders, and 2) attempts to expand organic production by servicing consumers in export markets. The latter strategy was favoured by many parties in the industry and it has succeeded in dramatically increasing the number of producers and the volume of organic produce in New Zealand. A major role in this development has been taken by large exporting organisations like HWL and Zespri. These organisations provided the organic agriculture movement with:

- Access to established markets overseas
- Infrastructure to support early development in some product sectors

- Research and development activities in an environment where state-supported research was decreasing.
- Increased legitimacy through their promotion campaigns and the ‘normalising’ effect of having some of New Zealand’s most recognisable food exporters involved in organic production.

The presence of large companies in the export development of organic agriculture has been controversial. Some long term organic growers feared that companies would undermine the organic standards for short term gain. While the first wave of companies entering organic exporting have been solid supporters of the BIO-GRO NZ standards, the second wave of companies has been less reliable. Several attempts to circumvent or appropriate the organic label have occurred in 1998, indicating that, while the responsible attitude taken by some companies is to be commended, organic standards must be defined/underwritten by third parties or the state.

Concerns about ‘food miles’⁹ are present in the industry and cannot be resolved by research findings in this programme. Opponents of organic exporting maintain that sustainable development must be rooted in local food systems (although adherence to this position is only partial by long term members of the organic agriculture movement in New Zealand), while advocates of exporting argue that the positive gains to the organic industry far outweigh these concerns. BIO-GRO NZ is currently holding to the latter position.

8.7 Has Export Development Disadvantaged the Domestic Market?

There have been long term concerns in the organic agriculture movement that export-led development would undermine the local market, as growers re-oriented their activities towards higher value export returns. This research programme has established that the domestic market is actually growing – particularly in the last few years. This is partly related to export growth due to:

- Export growers using segments of their crop/stock rotations to grow products for the domestic market which has decreased the market price of organic products
- Export rejects entering the domestic market
- Increased profile of organic food partly due to exporting activities.

Retailers in Christchurch argued that increasing volumes in the domestic market had pushed the price down, but had also resulted in an increase in consumer demand as organic products were no longer priced above the reach of many consumers. The overall effect was an increase in the total size of the domestic market. The influence of exporting should not be overplayed, however, as the domestic markets and export markets tend to deal in different food products with most domestic production being in fresh fruit and vegetables while the bulk of export production being in process vegetables and kiwifruit. This is even indicated by the regional locations of both sectors – best exemplified by the extremely domestic-oriented province of Nelson and the extremely export-oriented province of Gisborne.

The future relationship between these two sectors will increasingly be influenced by the:

⁹ Which questions the sustainability of food exporting where the fossil fuel requirements to transport organic foods over long distance outweigh the immediate environmental gains from organic food production.

- Extent to which new industries enter export organic activity utilising currently domestic-oriented segments of broadacre crop/stock rotations.
- Level of export 'reject' products being sold on the local market.
- Cost of organic certification due to the high level of infrastructure required to support export-led development – particularly the outcome of BIO-GRO NZ's recent attempt to develop a small growers' scheme for certification.

8.8 Is There a Role for State Involvement in the Organic Exporting Industry?

As the organic exporting industry had begun to grow, Government provided assistance (via Tradenz) to survey international markets for organic products. However, there has been minimal government financial support in the more critical area of developing NZ's organic supply capability. Difficulties are now arising in the organic exporting industry due to an over-reliance on private organisations to maintain the public good needs of the industry. These difficulties occur in three areas:

- R & D. Start-up companies have invested in their own research and development from which they have benefited. The recent emergence of free riders (particularly in Canterbury and Gisborne) will undermine the value of the pioneering efforts of these companies and make their future investment less likely because they will not capture all the benefits. Thus the public good needs for research may not be met. While there are a number of state-funded research programmes which have assisted in the development of components of organic production systems, there has been little state involvement, outside of the major fruit crops, in research aimed at integrating such components into viable certified organic production systems. This is particularly important in the mixed cropping situation, where it is difficult for a particular industry sector to justify expenditure on research into other phases of the crop/stock rotation.
- Technology transfer. This has experienced a similar situation to the above. The Gisborne case indicates that technology transfer will increasingly need to be met by third parties if future development is to occur. For conventional agriculture this party used to be MAF which no longer plays any public service delivery role.
- Standards. To date, BIO-GRO NZ has been the main organisation providing standards with international credibility. Achieving this has required BIO-GRO NZ to adjust to challenges and make the certifying process reasonably consistent and transparent. Its efforts are potentially undermined if other certifying organisations fail to meet standards that will have international currency. The adoption, use and acceptance of standards both at home and abroad clearly needed state intervention several years ago, and if MAF had taken action to address these needs, the problems encountered in 1998 would have been avoided. Further, the restructuring of MAF has resulted in the creation of MAF Quality Management (MAF Qual), which is a quasi-governmental organisation that has tried to create business opportunities by certifying organic production while ignoring the stated MAF Policy position on organic farming established in 1992. Such activities by MAF Qual created serious difficulties for the organic industry in 1998.

The appropriate level of state involvement in the organic exporting industry would be to cover at least the public good aspects of each of the above three areas. This level would be a 'bare minimum' level of state involvement (compared to Europe) which has nevertheless been lacking in

the deregulated environment. As the industry increases in scale, continued state dis-involvement could lead to major difficulties for the industry. Many would argue that the extensive public good benefits of organic agriculture (see Saunders et al. 1997) would easily justify state support of the industry that goes well beyond the above three areas.

8.9 What is the Most Appropriate Form of Certification for New Zealand?

The systems for certifying organic food have evolved considerably as the industry has taken off. In the early history of organic agriculture in New Zealand, certification was not required as there were so few growers, and legitimacy as a producer of organic food was established through peer recognition within the organic agriculture movement. The increasing number of organic producers has made formal certification a necessity (although many uncertified producers still operate successfully under the old system in the domestic market). BIO-GRO NZ has evolved as the dominant organisation in defining and certifying organic produce. It has done this without state recognition.

This research programme has identified three issues that must be addressed in certification for further development to take place:

- The recent emergence of company-specific standards or regional standards conducted by peer review pose a threat to the export market. Long term market access is predicated on the maintenance of credible organic standards which will be compromised by the emergence of too many competing systems.
- The Ministry of Agriculture and Fisheries has been regrettably slow in responding to the need for government recognition of organic standards.
- Should recent events result in a government recognition of organic standards it is imperative that these adhere to or be associated with an international standard widely accepted by the major export markets.

CHAPTER NINE

UNDERSTANDING THE CURRENT LEVEL OF DEVELOPMENT OF ORGANIC EXPORTING

In order to understand how the future development of organic exporting might be fostered and to work towards specifying an optimum development scenario, it is necessary first to understand how and why the current level of development has occurred. The main aim of this programme has been to identify factors which have actually worked in real situations to influence growth in organic food exports. This penultimate section will examine these factors and divide them into two sets. The first set includes those *necessary* factors which were preconditions for what occurred in New Zealand. These factors were specific to the historical position of New Zealand food production, politics, world trade and indigenous social movements, and were key factors in precipitating and influencing the origins of organic exporting. The second set were the mitigating factors which determined the degree of success of organic export development. An analysis of the origins and development of organic exporting will provide the basis for examining the optimum development scenario and related policy.

9.1 Preconditions for the Origin of Organic Exporting

Generally, the preconditions include three structural factors that existed in the environment in which primary production occurred. These included the changing features of world markets, the restructuring of New Zealand agriculture and the market demand for organic produce. There were also three preconditions that existed within primary production. These included the prior existence of an organic agriculture movement, formal standards for certification and start-up infrastructure to access markets. In the following section each of these preconditions is reviewed briefly to help spell out why organic exporting developed in the 1980s.

9.1.1 Changing Features of World Markets

Among those companies which contemplated developing export organic food products, most were strongly influenced by a perception that world market access was subtly changing. Since the completion of the GATT Uruguay round, an even stronger impression has emerged that many key First World markets are maintaining protection of domestic agricultural producers by shifting tariff barriers to 'food safety' barriers – something which we and others have referred to as 'green protectionism'. Such policies in first world countries have enduring political appeal by uniting the interests of both the agriculturally-dependent rural population and sophisticated urban consumers demanding greater levels of food safety and environmental accountability. Such policies shift the burden of environmental responsibility away from agricultural producers in importing nations and onto food exporting nations like New Zealand.

9.1.2 The Restructuring of New Zealand Agriculture

The restructuring of state support of agriculture post-1984 had a range of consequences for New Zealand agriculture. Research in this programme showed that some producers responded to uncertainty and crisis in conventional production by contemplating alternatives like organic production and going on to decide to produce organic products, some of which were for export.

9.1.3 Market Demand for Organic Products

For New Zealand exporters, the 1980s and 1990s have been characterised by generally falling demand for staple commodities and a ceaseless search for new high-value niche products to replace conventional commodities. At the same time, market information in the early 1990s suggested that the demand for organic products was very high. In this context, the coincidence of increasing green protectionism with high levels of established market demand for organic products made this an obvious option to consider. Consequently, organic exports developed with almost the exact opposite characteristics of conventional agriculture. Conventional agriculture was faced with problems of: increasing market barriers, lack of product differentiation, commodity markets in decline and an overproduction of these products by New Zealand growers. Organic exporting was faced by: low market barriers, high market demand, good product differentiation, but an undersupply from New Zealand growers.

9.1.4 Prior Existence of an Organic Agriculture Movement

All the above conditions persuaded exporters that alternative, green, high value products would be ideally suited to emerging world trade conditions. However, actually sourcing such a product proved challenging. This research programme has consistently argued that organic products moved to the forefront of these 'greening' strategies because of its position as the *fait accompli* of environmentally enhanced agriculture in the early 1990s. In 1990, the local organic agriculture movement had already fostered production of a range of products for the domestic market; thereby establishing that organic production was technically feasible for certain crops. Perhaps, in hindsight, a second feature of the local organic agriculture movement was even more important. Namely, that by participating extensively in the global organic agriculture movement, local representatives in New Zealand provided an accurate barometer of world tastes in organic food.

Put another way, the global integration of organic standards meant that local standards would automatically qualify as acceptable to distant consumers of organic foods due to the long history of the New Zealand movement and its participation in organisations like IFOAM. The importance of this factor only became fully clear when Zespri began investigating the potential market for Kiwigreen fruit. In reality, while there were great market advantages to having fruit produced under the Kiwigreen system, the actual name 'Kiwigreen' was not recognisable to consumers. Yet, organic kiwifruit had instant market recognition and demand. This leads to an important conclusion for organic products. While the emerging demands of global trade are increasingly leading towards the need for New Zealand exports to be 'greened', this does not mean that consumers will necessarily buy a new greener product. Green protectionism is operating principally as a mechanism for *rejecting* certain types of product rather than as a guarantee of consumer acceptance of their alternatives. Organic products, however, have been accepted as an alternative since the first experiments in the export market in the early 1990s, and both HWL and Zespri found that having an

organic product provided the market access and recognition they could use to launch a wider array of greening strategies for their products.

9.1.5 Formal Standards for Certification

As has been discussed earlier, the development of formal standards for organic products was a significant development in allowing exporting to emerge. This process was well underway within the organic agriculture movement before 1990, although the arrival of exporting organisations and their newly recruited growers added considerable pressure to BIO-GRO NZ to continue formalisation of standards and to professionalise their inspection services.

9.1.6 Start-up Infrastructure to Access Markets

Having argued that the prior existence of a local organic agriculture movement was a necessary precondition for development, this movement had not succeeded in reaching overseas markets (or, in fact, had any great conviction of the need to do so). In the absence of any state initiative, exporting organisations provided the start up infrastructure necessary to foster exporting. Any export activity of food products from New Zealand faces barriers of scale. A consistent problem for the exporting of organic meat is the difficulty in coordinating enough suppliers to fill even one container of meat at one port on a particular date. The large exporters like HWL and Zespri have used their size to pool growers' produce and reach the 'critical mass' necessary for exporting activity.

9.2 Factors Mitigating the Development of Organic Exporting

Having established these six necessary preconditions for the development of organic exporting, the actual development of organic exporting was mitigated by the effect of eight key industry variables. Generally, the factors include four structural features of the environment in which organic production occurs. These include the characteristics of an infrastructure for marketing and processing, industry politics, synergy or competition and certification. There are also four factors that relate to primary production. These include technical barriers, skills, stepping stones and ideological barriers. The outcome of the workings of these mitigating factors explains why organic exporting has reached (only) the current level of activity.

9.2.1 Infrastructure (Market and Processing)

Throughout this report, it has been recognised that certain key industry sectors like kiwifruit reached a 'critical mass' where supplies of organic products were both sufficient in volume and coordinated in a manner that enable exporting to occur. In many cases the infrastructure to achieve this was provided by an existent export oriented industry body (Zespri) or company (HWL). The OPEG has provided another tier of industry infrastructure for the purposes of coordinating export activity.

Market Infrastructure factors **positively** affecting the development of organic exporting:

- Exporting business involvement.
- Support of producer boards.

- Increasing grower numbers and product volume in export sectors.

Market Infrastructure factors **negatively** affecting the development of organic exporting:

- Hostility or indifference from some producer boards and companies has largely stymied organic exporting in their sectors.
- Low grower numbers in some product sectors have not reached the critical mass to enable exporting to occur.
- Ongoing difficulties in establishing a full rotation of high value organic products for growers. Still no widespread coordination of meat exporting which is a major infrastructural impediment to a viable rotation in many sectors.

Another arena of infrastructural challenges is in *processing* facilities. These provide a barrier to further development due to the need for demarcation between organic and conventional product when being processed.

Processing factors **positively** affecting the development of organic exporting:

- Organic processing usually only requires plant cleaning and product tracing systems which are much less costly to achieve than investment in entirely new processing facilities.
- Increasing grower numbers in export areas means more economic changeover of facilities to process organic produce.
- IPM systems like Kiwigreen educate packing houses about grading requirements which are more insect tolerant.

Processing factors **negatively** affecting the development of organic exporting:

- Insufficient grower numbers make changeover of processing facilities uneconomic in many product sectors.

9.2.2 Industry Politics

The organic agriculture movement has had a long history of political engagement with representatives of conventional agriculture. Since the formation of BIO-GRO NZ in 1983, organisations like MAF and NZ Federated Farmers have had a volatile relationship with the organic agriculture movement characterised by fluctuating levels of cooperation and interest among each of these parties. While the arrival of large exporters has stabilised much of the political relationship with the mainstream establishment in New Zealand agriculture, the organic agriculture movement has been subjected to intense internal political pressure due to concern by some long term members over the implications of organic exporting and the ‘mainstreaming’ of organic activity. This pressure has not altered the current political tenor of BIO-GRO NZ in support of export activity.

Two recent trends suggest that the political power of organic growers has grown as a result of export activity:

- 1) *Grower participation in industry politics.* One can make a case that the two most significant areas of organic export development: kiwifruit and process vegetables, have been characterised

by high levels of grower participation in industry policy making or strong bonds of loyalty between pioneer exporting companies and growers. This is most evident in the kiwifruit industry where the presence of strong industry champions for organic production eventually won the board's support for an organic export pool. Since then, extensive grower participation in organic policy making has been to the benefit of organic growers, as has the presence of a vocal and politically active organic growers association. Other industries have not reached such a situation. In process vegetables, the loyal bonds that formed between HWL and early growers are now under pressure as competitor companies emerge in that sector. For industries where there are no industry champions linked to Boards, or large companies, organic growers have been disadvantaged.

- 2) *National political activities by the organic industry.* Until recently, organic agriculture had little impact on national political institutions. MAF had shown limited interest in organic farming; producing two position papers which reflected a lukewarm support for the idea of organic agriculture. Recent events suggest that the arrival of large exporters, the emergence of the Tradenz-sponsored Organic Products Exporters Group and the increasing size of BIO-GRO NZ has increased the political lobbying power of the industry. In 1998, an emerging crisis in certification which potentially threatened the Japanese market saw concerted pressure put on MAF Regulatory Authority by BIO-GRO NZ, OPEG, and some of its high profile constituent companies. MAF RA responded to this pressure and acted to re-regulate the industry.

Political factors that have **positively** influenced the development of organic exporting:

- Increased lobbying power within the export industry.
- Increased political participation by organic growers in industry-level policy making.
- More effective mobilisation with less provocative activity by organic industry leaders.

Political factors that have **negatively** influenced the development of organic exporting:

- Outright hostility by NZ Federated Farmers in recent years.
- Lack of desire to regulate industry activity by MAF RA (until recently).
- Extravagant claims and accusations by some organic industry participants.

9.2.3 Synergy or Competition

Due to the necessity of rotational production for many organic production systems, two different companies can be interested in the same grower in two ways. First, these companies might be in synergy – each purchasing a product from two different parts of the crop rotation (e.g. squash and sweetcorn/peas). Alternatively, they may be in competition with each other for the same product (eg sweetcorn). There have been many useful cases of synergistic development in organic exporting which has had benefits for both companies and growers alike. One rationale for forming the OPEG was to try and develop more of these synergistic links. More recently, however, company competition has emerged which has more negative consequences. Synergistic relations between companies increases cooperation in the industry, enhances sharing of technical and market information and increases financial security for growers. Competition breaks down the trust relationships that have characterised early grower relations with key intermediaries, undermines the

economic value of company-based technology transfer and increases compartmentalisation of information about techniques and markets.

9.2.4 Certainty and Credibility in Certification Systems

One of the most significant threats to the New Zealand organic export industry is any loss of credibility of New Zealand's organic standards in international markets. Successful development to date has relied on the international reputation of BIO-GRO NZ as a credible certifier. While this has been sufficient until 1998, the lack of any government sanction of organic certification has opened the possibility for damaging instability in certification.

Certification factors **positively** affecting the development of organic exporting:

- Pre-existing organic standards through BIO-GRO NZ that exporting pioneers could use.
- Good international reputation for BIO-GRO NZ, including those that were tough rather than lenient standards.
- Ongoing linkages between BIO-GRO NZ and overseas organisations like IFOAM
- Professionalisation of inspectorate by BIO-GRO NZ in 1996
- Ongoing improvement of administration of certification by BIO-GRO NZ through the 1990s.

Certification factors **negatively** affecting the development of organic exporting:

- Demand from increasing numbers of growers requiring inspection placed unmanageable pressures on the administrative structure of BIO-GRO NZ and its inspectorate.
- Small scale activities do not attract the level of attention that they need to enable a rapid evolution of organic standards.
- Recent emergence of company-based standards which undermine the internationally recognised definitions of organic.
- Lack of action by MAF Regulatory Authority to recognise a national standard for organic production.

9.2.5 Technical Barriers to Production/R & D

While many technical problems of organic production have been successfully overcome, it is still the case that ongoing problems will need to be addressed. In sectors already involved with exports, the technologies will need to change since pests and disease populations are not stable over time. In other sectors, most notably those involving animals, there are technical challenges awaiting economically viable solutions.

R & D factors **positively** affecting the development of organic exporting:

- Key technical barriers in many industries are being overcome
- The high levels of innovation and dissemination of new techniques among pioneer organic growers
- The emergence of widespread research into biological control mechanisms
- A shift in R & D approach towards 'systems' style research, because of wider acceptance of IPM systems, which is more suitable for organic production.

- Private industry investment into organic R & D

R & D factors **negatively** affecting the development of organic exporting:

- There is still an ongoing need for research into technical barriers in some sectors¹⁰
- Lack of research on ‘whole farm’ systems
- Falling off of state interest in trial organic farms in the 1990s.
- Need to decrease reliance on ‘restricted’ inputs in some key industries.

9.2.6 Skills Development and Information Transfer

The development of organic production skills initially was reliant on individual innovation on farms, new knowledge arriving via migrants and WWOOFers from overseas, and intensive networks among committed organic growers. One interesting characteristic of early organic production was the high degree to which successful growers allowed their innovations to be taught to new entrants. Since the development of organic exporting, two further observations can be made. First, the pioneer companies have had an important role to play in developing new skills and transferring knowledge to growers through newsletters, seminars, and farm visits. Second, many ex-conventional farmers have found the skills required to produce organically to be a significant attraction. Some commented that they ‘felt they had regained control over the farms’ and could start to ‘think for ourselves again’.

Skills factors **positively** affecting the development of organic exporting:

- High level of networking between organic growers
- Generous extension of innovation from pioneer growers
- Influence of exporting organisations
- Important role of some universities/polytechnics.

Skills factors **negatively** affecting the development of organic exporting:

- Knowledge compartmentalised to key export sectors
- High profile failures among some new organic converts with no prior farming experience (exporters consequently began to target skilled conventional farmers as potential organic growers rather than new entrants to farming with a prior commitment to organics).
- Decreasing willingness by some high profile growers to share knowledge lest they undermine their niche market position.
- Increasing competition between some companies for suppliers has rendered R & D and technology transfer less economically attractive in the face of new entrant companies acting as free riders on past skills development.
- No government provision of information (cf. the situation in Britain with information hotlines successfully trialed) due to the restructuring of MAF from a service delivery organisation to a policy development organisation.

¹⁰ A comprehensive list of current technical research needs in organic production are listed in Saunders et al. (1997: 51).

9.2.7 Stepping Stone Systems

An important factor which has inhibited the uptake of organic production is the perceived degree of 'distance' between organic and conventional production. Likewise, the time it takes to move from conventional to fully certified organic production acts as a barrier to new entrants. Since 1990, a number of developments have emerged as stepping stones to organic production, particularly the emergence of intermediary systems like Kiwigreen.

Stepping stone factors **positively** affecting the development of organic exporting:

- Exporters offering high incentive premiums for produce from land still certified as 'in transition' to full organic status.
- BIO-GRO NZ's acceptance of partial conversion of properties in the short term in anticipation of full conversion in the long term has built confidence for many new converts.
- The use of 'restricted to proof of need' inputs under BIO-GRO NZ standards has enabled some industries to develop which would otherwise be stymied.
- The presence of intermediary system like Kiwigreen has built confidence in organic pest control regimes
- The full acceptance of Kiwigreen has dramatically narrowed the perceived distance between the mainstream kiwifruit production system and organic production.

Stepping stone factors **negatively** affecting the development of organic exporting:

- The lack of intermediary systems in many agricultural sectors. In this respect, pastoral industries seem to lagging behind their horticultural equivalents.

9.2.8 Ideological Barriers

Resistance to the idea of organic farming still occurs at all levels, including farmers, processors and researchers. While there have been considerable gains in this area – as evidenced by the numbers of new converts to organic production registering in the last 12 months – the industry remains very small.

Ideological factors **positively** affecting the development of organic exporting:

- Promotional activities by new entrant businesses
- Support from Tradenz
- Mainstreaming of organic image by ex-conventional converts to organics
- Increasing credibility of organic techniques as a viable production system
- The presence of high profile organic growers who have acted as role models for new entrants to production

Ideological factors **negatively** affecting the development of organic exporting:

- Persistence of old stereotypes among industry leaders and conventional producers
- Institutional culture in agricultural science still suspicious
- Lukewarm support from MAF

- Lack of high profile growers in some sectors
- Overt antagonism by some long term organic growers to new ex-conventional growers and remaining conventional farmers

CHAPTER TEN

OPTIMUM DEVELOPMENT OF ORGANIC EXPORTING

The previous section has shown how eight factors mitigated the actual development of organic exporting in New Zealand. The actual development occurred as a result of the effect of these factors, effects that we have shown had both positive and negative dimensions. It was not the case that the factors were all negative in their effect (unlikely to have organic exporting at all) or that all the factors were positive in their effect (organic exporting unproblematically developed). In identifying these key factors we are now in a position to specify a hypothetical Optimum Development Scenario (ODS) for organic exporting. The ODS occurs when each factor manifests positively. Such a scenario is hypothetical because in reality future developments will reflect the outcome of the working of both the positive and the negative dimensions of the factors. However, in terms of practical policy we now know what factors work in favour of organic exporting and in what direction policy should focus. In essence, any policy should work towards maximising the positive dimensions and minimising the negative dimensions of each factor.

While the general policy implication is clear it involves many interrelated factors and the implications may be obscured by this diversity. We therefore move on to provide some focus by suggesting priority areas for policy. These include reducing ‘distance’, technical barriers, critical mass, and product integrity. In all cases the principle being applied is that policies should reduce barriers to development of organic exporting by supporting the positive dimensions of the key factor and minimising the effects of the negative dimension. In a sense then what we are suggesting is an ‘optimum policy’ to parallel the ODS.

10.1 Reducing ‘Distance’

Throughout this research programme, a persistent barrier to the development of organic exporting has been the perceived ‘distance’ between conventional and organic production. By ‘distance’ we mean the perceived extent to which systems of production (and processing) would have to change to accord with the standards for organic production. The general experience of successful industries is that any reduction in the generally perceived distance between conventional and organic production has led to increased levels of grower conversion to organic production. This has happened in a variety of ways:

- Most of the successful early export crops like kiwifruit and squash do not technically have much distance between conventional and organic production (the same is not true for products like apples).
- Stepping stone systems like Kiwigreen or other IPM systems have given growers the opportunity to experience biological mechanisms of pest control which has built confidence in the pest control systems operating in full organic production.

- The full mainstreaming of an IPM system like Kiwigreen has shifted ‘conventional’ production much closer to organic production.
- Better understanding of the actual techniques and management systems in organic production has replaced the commonly held misconception that organic farming is ‘farming by default’ with no active management or intervention in production.
- ‘Success stories’ of ex-conventional growers who have converted help other conventional growers quantify the level of risk involved in conversion and can, in some cases, reduce the perceived distance between the two systems.

Therefore industry-level strategies for expanding the grower base need to address the issue of perceived ‘distance’. This has been addressed by promotional campaigns like ‘Grow Organic With Watties’ which are designed, in part, to demystify organic production. Industry level activities like field-days, farm visits, discussion groups and grower organisations have all been useful in promoting organic production as achievable for conventional producers.

Setting aside attempts by recent entrants to establish “company” standards less rigorous than BIO-GRO NZ, there is little sentiment in the organic horticulture industry towards reducing distance by reducing some standards in organic production for horticulture. While there was some suggestion in the late 80s by MAF staff that the standards were too strict, this has not been accepted as a valid or sustainable option for organic horticulture. There is ongoing industry debate as to whether the perceived distance between conventional and organic livestock production is currently too great and whether the standards should be adjusted. This debate provides an interesting contrast to the horticulture situation, but this research programme has no firm evidence from the horticulture sector that could be usefully contributed to the livestock debate.

10.2 Reducing Technical Barriers

The major achievement of organic food exporting has been the credible establishment, for some product sectors, that organic production is technically viable. All other developments logically stem from this. This is most clearly exemplified in the kiwifruit industry where, prior to developing organic control mechanisms for scales, organic kiwifruit production was marginal and risky. Once this technical barrier was overcome, the myriad of other intervening variables came into operation. However, the kiwifruit example not only displays the positive consequences of overcoming technical barriers, it also shows the barrier posed by technical difficulties in production. The current position of the overall organic industry reflects neither the fears of many scientists in the late-80s – that organic production would never be technically feasible – nor the claims of some extreme devotees of organic production that current technical barriers represent only an unwillingness by practitioners to attempt solutions. The vast majority of growers operate in a production environment where excessively risky strategies are not considered unless extreme or unusual situations arise (as was the case for many farmers as rural restructuring was occurring in the 1980s). Consequently, there are *real* technical barriers in the minds of conventional producers in many sectors that cannot simply be overcome through the heroic (or foolish?) efforts of industry pioneers. Overcoming these barriers will require the following:

- Ongoing investment into organic R & D through both direct state investment in organic research and indirect research into biological control mechanisms.

- Better networking of research results among growers. There has been a history of useful networking of information among organic growers, but evidence from some new areas like Gisborne suggest that recent converts are not networking to the same extent.
- Ongoing investment by companies into sector specific issues in production.
- Increased need to examine whole-rotation or whole-farm systems of production.

This is one point at which state involvement in the organic industry might increase with high potential benefits for organic production and also crossover benefits for low-input or IPM systems in many production sectors. State, rather than private, involvement is required because:

- Private investment into R & D may decrease as organic techniques are not patentable (a concept the organic industry would be ideologically opposed to) and new entrants are 'free riding' on past R & D investment.
- Organic farming research needs to incorporate an earlier style of experimentation characteristic of the 1980s in which whole farms/rotations were analysed. This style of research is less likely to be conducted by private firms which are primarily concerned with specific crops and is more likely to suit the research activities of state agencies like CRIs or universities.

In summary, technical barriers to further development are a constant feature of the industry (as with all production sectors), but recent expansion of the industry suggests that technical barriers that were once considered intractable by the science establishment can be overcome, leading to considerable industry expansion and a range of public good benefits.

10.3 Attaining Critical Mass

Many of the above variables are closely related to the issue of 'critical mass'. In the above analysis of: technical issues, ideological issues, infrastructure (processing and marketing), skills development, and industry political activity, there has been historical evidence of a particular point – critical mass – being reached in which the barrier of limited size/scope was overcome allowing industry development to take off. All the successful examples of organic exporting have reached critical mass – usually through the coordinating activities of a large company or producer board. Those sectors that are still immature and undeveloped are, most often, faced with an inability to reach critical mass and therefore service export demand. This has been most obvious outside the horticultural sector (particularly in the meat industry), but also affects some horticultural industries.

The question remains as to how to enable sectors to reach critical mass – both in terms of the sheer number of producers in a sector, and also in terms of the infrastructure required to support exporting, research and technology transfer. Evidence from those sectors where successful growth has occurred in New Zealand suggests that three options are possible:

- The agency of a large company (e.g. HWL) or producer board (ZIL) enables enough growers to be assembled and product pooled to reach critical mass. Large exporters have established marketing channels and contacts and organic products can simply enter an existing trading infrastructure.
- Stepping stone systems like an IPM-system are fostered as an industry-wide endeavour and the crossover benefits for organic growers are then available to assist expansion of organic

production. Trading in niche, branded, batch-processed products like table wine, baby food, or honey, requires less volume of supply and dramatically lowers the critical mass required for export.

In the international scene, other options for creating critical mass have included government schemes to provide incentives for grower conversion (thereby supplying sufficient product to overcome barriers of size in markets), organic grower cooperatives which have pooled supply, and 'box schemes' in the local market which deliberately circumvent consumer desires for a consistently available product (such consumer demands dramatically increase the critical mass required to supply such a market).

In the New Zealand situation, the political will is unlikely to be present for some time to create forms of government incentives for organic production characteristic of Europe, and box schemes and cooperatives seem more relevant to the local market. Some grower-based initiatives to coordinate the establishment of critical mass in products like beef, may emerge in the next few years. Such initiatives seem futile in the light of intractable resistance to the establishment of organic export lines by some producer boards¹¹ and peak industry bodies which could achieve such ends with considerably more ease.

10.4 Securing Product Integrity

It was not until 1998 that any serious threat emerged to the integrity of products as being legitimately 'organic' in the export trade from New Zealand. All the large exporting companies and grower organisations have been fully committed to supporting standards which had international legitimacy as 'organic'. During 1998, a number of new entrant organic exporters drafted company 'organic' standards that fell well below international standards. Widespread concern within the industry that this could threaten the international reputation of organic produce from New Zealand prompted MAF RA to (belatedly) agree to recognition of a national body of standards for organic production. While this threat seems to have been averted (and the consequences in the Japanese market alone could have been severe), it highlights what could be a major barrier to future development of the industry – failure of product integrity in the marketplace due to the discovery by market authorities, consumer groups or consumers that produce does not, in fact, meet internationally recognised criteria for organic production. This was the experience of Chilean 'organic' kiwifruit exporters in 1995, who were subsequently ejected from the Japanese market for two years.

Two threats to product integrity exist:

- Any attempt by companies to trade under standards which do not adhere to internationally recognised definitions of organic production, or attempt to manipulate existing standards for production. This occurred in 1998, and it is anticipated that in the near future, industry participants and MAF RA will establish a structure designed to minimise the risk of it happening again..

¹¹ Evidence from this programme of research shows that producer boards can provide either the perfect springboard for coordinated industry-wide development (e.g., Zespri, Hop Producers Board) or pose a formidable barrier to any form of development (e.g., the New Zealand Dairy Board, the New Zealand Meat Producers' Board, the Game Industries Board).

- Product failure due to growers 'cheating' in production with their produce being detected as non-organic in the market.

This latter scenario has not yet occurred (to the knowledge of the researchers in this programme). Yet, this is not to say that it will not ever occur, particularly as increasing numbers of growers enter the industry. It is imperative that the industry prepares a 'crisis plan' to deal with this contingency rather than waiting to see if any such situation might arise. Such a plan should involve a coordinated response from the OPEG, the certifier involved, and MAF RA, to reinforce the effectiveness of organic inspection and auditing, and the rapid identification of the point at which product integrity was compromised. It would be prudent for individual exporters or sectors to have their own plans for such a contingency in their own or other sectors.

References

- Buck, Daniel, Christina Getz, and Julie Guthman (1997) "From Farm to Table: The Organic Vegetable Commodity Chain of Northern California." *Sociologia Ruralis* 37(1): 3-20.
- Campbell, H. (1996) *Recent developments in organic food production in New Zealand: part 1, organic food exporting in Canterbury*. Studies in Rural Sustainability - Research Report No. 1, Department of Anthropology, Otago University.
- Campbell, H. (1997) Organic Food Exporting in New Zealand: The emerging relationship between sustainable agriculture, corporate agri-business and globalising food networks. in H. De Haan, B. Kasimis, and M. Redclift (eds.) *Sustainable Rural Development*, Ashgate: Aldershot.
- Campbell, H., Fairweather, J. and D. Steven (1997) *Recent developments in organic food production in New Zealand: part 2, Kiwifruit in the Bay of Plenty*. Studies in Rural Sustainability - Research Report No. 2, Department of Anthropology, Otago University.
- Campbell, H. and B. Coombes (*in press*) Green Protectionism and Organic Food Exporting from New Zealand: Crisis Experiments in the Breakdown of Fordist Trade and Agricultural Policies. *Rural Sociology*.
- Campbell, H. and B. Coombes (*forthcoming*) Organic Food Exporting in New Zealand: Current Interpretations and New Directions in Research. In G. Lawrence, D. Burch and J. Goss (eds) *globalisation*.
- Coombes, B. and H. Campbell (1998a) *Recent developments in organic food production in New Zealand: part 4, The Expansion of Organic Food Production in Nelson and Golden Bay*. Studies in Rural Sustainability - Research Report No. 5, Department of Anthropology, Otago University.
- Coombes, B. and H. Campbell (1998b) "Dependent Reproduction of Alternative Modes of Agriculture: Organic Farming in New Zealand." *Sociologia Ruralis* 38(2).
- Coombes, B., Campbell, H., and J. Fairweather (1998) *Recent developments in organic food production in New Zealand: part 3, Exporting of Organic Produce from Gisborne District*. Studies in Rural Sustainability - Research Report No. 4, Department of Anthropology, Otago University.
- Fairweather, John R and Hugh Campbell (1996) "The Decision Making of Organic and Conventional Agricultural Producers". Research Report No.233, Agribusiness & Economics Research Unit, Lincoln University.
- Flora, C. B. (1992) Reconstructing Agriculture: the case for local knowledge. *Rural Sociology* 57(1):92-97.

- Hassanein, N. and J. Kloppenburg (1995) Where the grass grows again: knowledge exchange in the sustainable agriculture movement. *Rural Sociology* 60(4):721-740.
- Kloppenburg, J. (1991) Social Theory and the de/reconstruction of agricultural science: local knowledge for an alternative agriculture. *Rural Sociology* 56(4):519-548.
- Kloppenburg, J. (1992) Science in Agriculture: a reply to Molnar, Duffy, Cummins, and Van Santen and to Flora. *Rural Sociology*, 57(1):98-107.
- Liepins, R. and H. Campbell (1997) *Men and women as stakeholders in the initiation and implementation of sustainable farm practices: Organic agriculture in Canterbury*. Studies in Rural Sustainability - Research Report No. 3, Department of Geography, University of Otago
- MAF (1991) *A Proposed Policy on Organic Agriculture* MAF Policy Position Paper No. 1. Ministry of Agriculture and Fisheries, Wellington.
- Molnar, J.J., Duffy, P.A., Cummins, K.A. and E. Van Santen (1992) Agricultural Science and Agricultural Counterculture: Paradigms in search of a future. *Rural Sociology* 57(1):83-91.
- Saunders, C., Manhire, J., Campbell, H. and J. Fairweather (1997) *Organic Farming in New Zealand: An evaluation of the current and future prospects including an assessment of research needs*. MAF Policy Technical Paper 97/13. MAF, Wellington.
- Scully C. (1992) *Feedback from a seminar on organic farming*. Report to Wattie Frozen Foods Ltd.. Agribusiness and Economics Research Unit, Lincoln University, Canterbury.