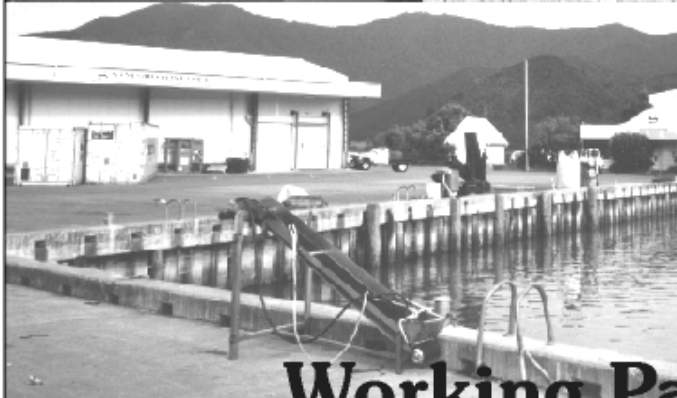


Resource Community Formation and Change

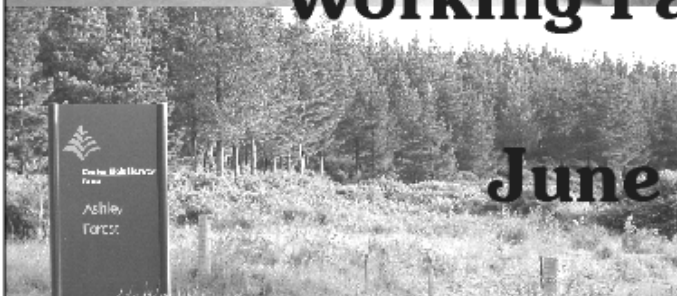
# Business Ownership in Natural Resource Dependent Industries



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## INTRODUCTION

“Resource Community Formation and Change” is a research programme funded by the Foundation for Research, Science and Technology<sup>1</sup> which seeks to understand the relationship between communities and their natural resource base. Over the last four years the programme has focussed on a comparative analysis of communities that are dependent on forestry, agriculture, mining, energy (oil and natural gas, hydro-electric power generation), fishing and tourism industries. It is providing a substantial base of information about these types of communities and the change that has occurred in them. The research has moved beyond a boom-bust model of resource cycles in localities, by adding an understanding of the interconnections between resource sectors at local and sub regional levels. The information and understanding generated by the research will be useful for future impact assessments and local social and economic development strategies.

Over the next two years (2000-2002) the programme is broadening the focus of its analysis by:

- examining the changing nature of work and technology in natural resource based production and processing industries, and the processes by which skills are developed and transferred by individuals and groups through families and community structures;
- identifying changes in the ownership of businesses involved in the production and processing of natural resources, including new business formation and inter-generational succession of family businesses; and
- providing models and decision support scenarios for use by natural resource decision makers and communities in regional economic and social development.

As part of this phase of the programme (2000-2001) we reviewed the international and New Zealand literature, analysed official and industry statistics, and examined the nineteen case studies of resource communities conducted during previous phases of the programme, to identify significant changes in the ownership of businesses that have occurred in the six resource industries noted above. The literature search was conducted at the library of the University of Canterbury, and used three main data bases - Infotrac<sup>2</sup>, Index New Zealand and the Social Science Index. The search was made for the following countries:

- New Zealand, Australia, Canada, United Kingdom and the United States for the forestry, agriculture, fishing, mining and energy (oil, natural gas, hydro-electric power generation) industries; and
- the first three countries listed above and the islands of the South Pacific for the tourism industry.

The search across these countries and six sectors was further narrowed by using several keywords; i.e. *ownership, investment, human capital, entrepreneur, inter generational succession, business formation, indigenous, and tribal*; to help identify specific items for review.

The paper examines the six natural resource sectors to identify the major features and changes of ownership in each industry in preparation for business surveys and interviews with key informants.

## FORESTRY

The following analysis of the forestry sector discusses the ownership of the forests and the processing facilities which add value to the timber harvested from the forests.

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<sup>1</sup> Resource Community Formation and Change, Contract TBA X0001. For further information on the research project contact Taylor Baines & Associates (PO Box 8620, Christchurch or by email: n.taylor@tba.co.nz).

<sup>2</sup> A multidisciplinary data base that provides on-line text and abstracts from throughout the world.

## *Ownership of forests*

There has been a common trend in the concentration of forest ownership and the type of ownership in Sweden, Finland and southern United States, where there has been a decreased concentration of ownership with an increase in the number of small forest holdings. Forest ownership has diversified away from private corporations and the government to investment companies, farmers, pensioners and wage/salary earners. This diversification has been driven by the planting of new land, and the sale of company-owned forests. The sale of company-owned forests in the southern United States appears to have been driven by the high opportunity cost of forest ownership for vertically integrated companies when they were expanding their processing capacity. Although neither Chile nor New Zealand have experienced a decreased concentration of ownership, the expansion of the planting of new land in New Zealand indicates that forest ownership here is likely to become more concentrated (Turner, nd: 27).

Forest products companies in Sweden, Finland, the southern United States, Chile and New Zealand are vertically integrated. Management practices in the forests are driven by the product demands of the processing plants and the constraints of tight cash flows. The outcome may well be an increased supply of timber during a period of economic downturn which further reduces profitability, with the result that companies attempt to reduce their costs by spending less on forest management. The priorities of farmers owning forests in Finland, for example, is primarily economic. They increase their forest cut when stumpage prices increase or their non-forestry income declines. Forest owners in Finland, Sweden and the southern United States, who are urban based (such as wage and salary earners), are less motivated by economic goals as their priority is recreation. This type of forest ownership is rare in New Zealand. Investment companies are an emergent type of forest ownership; particularly in the southern USA. Although investment companies may be responsive to stumpage prices, they are likely to supply less timber for the market during an economic downturn as they are less concerned with cash flow than forest product companies. Their management practices are usually focussed on maximising the asset value of the forest (Turner, nd: 28-29).

Over the last 25 years there has been a growing trend towards the institutional ownership of forests in the United States. Legislation in 1974 enabled institutional investors to diversify their portfolios from fixed income securities. Around that time forest product companies began to view the value accumulated in their forests as a source of capital for expanding their processing facilities. They decided to reduce or restructure their holdings of timberland, and some of these holdings were purchased by institutional investors. Restructuring in the forest industry has increased the supply of these assets, while an improved understanding of the financial aspects of timberland by investors has driven demand. Institutional investors provide a new opportunity for forest stewardship. They place less emphasis on cash flow than forest product companies, and are more focussed on maximising the asset value of forests than on meeting the supply requirements of individual mills or supporting the consumption needs of non industrial forest owners (Binkley *et al.*, 1996: 22, 27).

About half of New Zealand's plantation forests are now owned by major forest companies; with over 35 per cent of the planted area being owned or managed by Carter Holt Harvey and Fletcher Challenge Forests (see Table 1). Privately owned forests comprise 44 per cent of the planted area (Ministry of Agriculture and Forestry, 2000: 26). The legal entities included in this category of ownership include private companies, partnerships, individuals and trusts (including Maori trusts and incorporations).

*Table 1: Major Plantation Forest Ownership in New Zealand as at 1 April 1999*

<b>Owner/Manager</b>	<b>Planted area (thousands of hectares)</b>	<b>Percentage of total planted area</b>
Carter Holt Harvey	325	18.8
Fletcher Challenge Forests	288	16.6
Rayonier New Zealand	105	6.1
Weyerhaeuser New Zealand	64	3.7
Juken Nissho	54	3.1
Ernslaw One	46	2.7
Crown Leases	43	2.5
Other	806	46.5
<b>TOTAL</b>	<b>1,731</b>	<b>100</b>

Source: New Zealand Forest Owners Association, 2000: 5.

Changes made by government to forest taxation schemes in the 1992-1993 year stimulated an afforestation boom, as increased numbers of farmers established forestry blocks on their properties either on their own behalf or in partnership with urban investors. Numerous newspaper advertisements also publicised afforestation ventures as a long term investment option for the public (see Table 2). However, these ventures became less popular in the late 1990's as world timber prices declined.

*Table 2: Selected afforestation ventures in New Zealand 1992-1994*

<b>Name</b>	<b>Status</b>	<b>Location</b>	<b>Area (hectares)</b>	<b>Species</b>	<b>Investment Unit</b>	<b>Projected Internal Rate of Return %</b>
Evergreen Forests Ltd	Private company	Waikato Rotorua Gisborne	1166	P. radiata	Shares \$2,000 min.	8.4
Woodleigh Super trees	Partnership	Waikato	344	P. radiata	\$15,000 over 6 yrs	9.47
Waipuna Forest Ltd	Public company	Rangitikei	411	P. radiata	Shares \$5,000 min.	8.47
Waiteata No.1 Forest Partnership	Partnership	Gisborne	417	P. radiata	\$66,103 over 25 yrs	10.77
Cloverhills Forest	Partnership	Hawkes Bay	189	P. radiata	\$43,203 over 27 yrs	7.85
Hardwood Forests Ltd	Public company	Southland	786	Eucalyptus sp.	Shares \$2,000 min.	9.74

Source: Company and partnership prospectuses cited in Roche (1996: 166).

### *Ownership of forestry processing facilities*

Processing plants in the global forest industry have increased their use of residues and levels of conversion through the adoption of new technologies, and have maintained their profitability by more efficient use of the wood resource. They have also sought to restructure their operations by increasing economies of scale and the vertical integration of processing activities (e.g. by integrating a pulp mill with a paper mill or sawmill). Processing plants that have not adopted improved technology have closed down (Turner, nd: 29).

Competition from producers in Canada and the south eastern United States, and rising production costs, induced structural changes in the forestry industry of the Pacific Northwest of the United States during the latter part of the 20<sup>th</sup> century (Brunelle, 1990: 108). Competition from the south eastern United States arose from states such as Alabama where 13 of the state's 16 pulp and paper mills were established between 1954

and 1973. Forest companies were attracted to Alabama by the aggressive recruitment policy of the state government which induced them with gifts of land, infrastructure development, industrial development bonds and tax incentives (Bailey *et al.*, 1996: 479). The industry in the Pacific Northwest responded to this competition by closing inefficient mills, increasing the capacity and productivity of some other mills, and reducing its permanent workforce. Older mills were more labour intensive, so the modernisation of a mill maintained or improved its productive capacity, while allowing its owners to reduce the workforce by as much as 50 per cent (Brunelle, 1990: 109).

Frequent lay-offs are experienced by loggers and sawmill workers in North America. Sawmills and logging operations have a higher labour demand than pulp mills, and may be closed down without great loss to the company. Production is geared to the high marginal costs of labour, energy, and other inputs, and not to the fixed costs of plant or the continuous production technologies as is the case for pulp mills. Sawmill workers can be trained quickly, so the loss of experienced employees is not the problem it is for higher-technology and capital-intensive pulp mills. Loggers are more skilled, although as there are more of them available than jobs they are also more likely to be laid-off than workers in pulp mills (Marchak, 1990: 97-98).

Brunelle (1990) analysed changes in ownership structure by grouping the hundreds of companies operating in the Pacific Northwest into three categories: national, regional and local. He categorised the companies according to several criteria: the location of corporate headquarters; the number of wood product plants and their location; the range of products sold (national companies produced pulp and paper in addition to lumber and plywood); vertical integration; and the history of individual companies. Next he collected statistics on lumber production and plywood capacity for the years 1978 and 1985 and calculated the share of overall industry production for each type of company. Brunelle (1990: 112) found that the role of local firms in lumber production was “surprisingly large, given the popular impression that National companies control production in the industry”, and that there had been a shift in production from national to local and regional firms between 1978 and 1985. National firms closed many mills and plywood plants during this period. Most of them contracted out their logging and trucking operations instead of employing their own crews. They also persuaded the unions in their mills to accept wage concessions. Some of the closed mills were purchased or leased by new owners. These mills could be operated at a cheaper cost as the owners were less likely to employ unionised labour or have large amounts of high priced wood under contract. Other closed mills were reopened by worker cooperatives. This change in ownership structure was in sharp contrast to the 1950-1970 period when most acquisitions in the industry were undertaken by national companies (*ibid*: 116-117).

The depletion of ‘old-growth’ privately owned timber was a major factor in the closure of mills in the Pacific Northwest. The growing dependence on second growth timber placed a greater premium on equipment that was capable of extracting maximum value from each log. This switch to capital intensive technology allowed companies with modernised mills to reduce their workforces, and to outbid competitors with more labour intensive operations on timber contracts (Weeks, 1990: 127-128).

Regional and local firms were among the first to upgrade their mills in the Pacific Northwest as their reliance on more expensive timber supplies forced them to invest in new processing technologies. Later national firms modernised their plants when their own supplies of timber were almost exhausted, and they were becoming reliant on the log market and government owned timber. Smaller companies have changed their focus to the recovery of maximum value from each log they process. They use their advantages over larger companies, such as lean management, entrepreneurship, and the ability to convert logs into high-price products, to sell in increasingly specialised markets (Brunelle, 1990: 120).

Forest companies in New Zealand are pursuing a similar strategy. Fletcher Challenge Forests, for example, has established high value niche markets for its radiata products in the housing markets of the United States and Japan. The company has also recently introduced six new wood products for the Australian and North American markets over the last two years. This strategy is designed to increase the company’s margins over those available from the selling of logs, and to reduce its exposure to fluctuating commodity prices. The sale

of the company's manufactured products comprised 53 per cent of its total sales revenue for the year ended June 2000 (Fletcher Challenge Forests, 2000: 3-4, 8).

Major forest companies in New Zealand have also followed the example of their North American counterparts by vertically integrating their operations and centralising their management structure. Carter Holt Harvey, which is 50 per cent owned by the International Paper Company of the USA, has recently reversed this centralised approach to management, however, by reorganising its six business groups (i.e. Forests, Wood Products, Pulp Paper and Tissue, Packaging, Distribution, and Associated Companies) into 32 smaller business units. The company expects the units will "have the edge in terms of responding quickly to marketing opportunities, understanding their customers and having an entrepreneurial outlook", while remaining "part of a large organisation with its advantages such as purchasing and funding" (Carter Holt Harvey, 2001: 5). The number of employees in these business units ranges from just 12 in the smallest to 700 in the largest, and the management staff based at corporate headquarters is expected to be reduced to about 10 people (*The Press*, 3/3/01).

First stage processing activities provided three-fifths of total employment in the New Zealand forestry industry in February 1999. As Table 3 reveals the geographic units performing factory based activities typically employ more staff per unit, than those which undertake activities in the forests. Although the number of people engaged in forestry and first stage processing activities increased by 20 per cent from 1990 to 1999, this employment growth was unevenly distributed over the sector. Employment in forestry and logging (49 per cent) and in sawmills, planing and other mills (28 per cent) grew strongly during this period, whereas the number of people engaged in pulp, paper and paperboard manufacturing declined by just under 30 per cent.

Table 3: *Activity/Geographic Units and Employment in Forestry and Processing Activities - February 1990 and 1999<sup>3</sup>*

Activity	1990		1999	
	Number of Activity Units	Persons engaged	Number of Geographic Units	Persons engaged FTE
Forestry & logging	1,284	5,622	5,093	8,370
Sawmills, planing & other wood mills	482	7,715	591	9,900
Pulp, paper & paperboard manufacturing	30	4,396	22	3,090
<i>Total forestry &amp; first stage processing</i>	1,796	17,733	5,706	21,360

Source: Department of Statistics, 1992: 39& 41; Statistics New Zealand, 2000: 61-62.

## AGRICULTURE

This account of the agricultural sector examines the changing patterns of ownership and management of the farms and the industries that transform farm produce into consumer commodities.

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<sup>3</sup> The activities of the forestry industry have been summarised into three major categories as Statistics New Zealand changed its basis of classification from the NZSIC system to the ANZSIC system for categorising activities from 1997. Geographic units (formerly activity units) and full-time equivalent (FTE) persons engaged (formerly persons engaged) are defined the same as the terms they superseded. These comments also apply to the business activity statistics derived for the fishing, mining and energy sectors which are presented later in this paper.

## *Farm ownership*

Helbling (1996) has analysed changes in the ownership structure of New Zealand farms since the withdrawal of state subsidies during the 1980's. 'Family farms'<sup>4</sup> dominated all agricultural industries both before the withdrawal of subsidies (1982) and after (1992). Therefore "the position of family farming vis-a-vis alternative organisational forms was stronger after eight years of farming without state support than prior to deregulation" (Helbling, 1996: 22). Other categories of ownership identified by Helbling are 'family managed farms', which he defines as the same as 'family farms' except that they have more than three labour units, and 'corporate farms'.

The share of family farms was highest in the sheep/beef and cropping industries. Only in the poultry industry was the proportion of family farms less than 70 percent of the total number. Except for the dairy industry the proportion of corporate farms grew moderately between 1982 and 1987, whereas the share of family farms decreased. The expansion of corporate farming, and the decline of family farming were halted between 1987 and 1992. While family farming strengthened its position in this five year period, the proportion of corporate farms was higher than before deregulation for all industries except dairying (Helbling, 1996: 19-21).

Some family farms are enterprises whose labour is provided solely by unpaid members of the family (i.e. the owner does not contribute farm labour). They are termed 'part-time family farms' by (Helbling, 1996: 22). The percentage of part-time farms in all industries was higher in 1992 than ten years before. Most part-time farms were relatively small farms in terms of their labour input. After the deregulation of agriculture the proportion of part-time family farms increased sharply as "the removal of state support induced many farmers to seek off-farm employment to secure their farm business" (*ibid*: 22).

Family farms may also employ seasonal, casual and contract labour. In 1987 and 1992 family farms in the sheep/beef, crop and horticulture industries employed relatively more contract labour than the dairy, poultry and pig industries where the use of such labour was negligible. Family farms in the horticulture industry used less temporary labour in 1992 compared with 1987, while those in the pig, crop and sheep/beef industries used almost the same amount. Only those in the poultry and dairy industries increased their input of temporary labour between 1987 and 1992 (Helbling, 1996: 22-23).

The share of output produced by family farms increased moderately between 1987 and 1992 for all commodities except for horticulture and crop products. In both of these years corporate farms contributed less than 18 percent of total output for all six commodities, and family-managed farms had a relatively higher share of the production than corporate farms for all the commodities. The proportion of land held by family farms was more than 50 per cent for all industries in 1992, while family-managed farms also held more land than corporate farms in all industries (Helbling, 1996: 24, 27). Outsider investors were active in buying land after 1984 when prices of farmland were depressed largely due to the removal of state support to agriculture. When prices recovered, however, they purchased less farmland as operating returns on capital in farm businesses was usually too low for corporate shareholders (*ibid*: 33).

The intergenerational transfer of the family farm is becoming a more difficult process in New Zealand as the assets are now expected to be distributed more equitably among the children as well as providing funds for the retirement of the parents (McCrostie Little and Taylor, 1998). Zino (1998: 15) suggests that this process of intergenerational transfer may be made a lot easier when farm forestry is integrated with the operation of the farm business. Yet many sons or daughters may not wish to take over the farm of their parents. UMR Insight Ltd (2000) conducted a survey of 525 of rural people in New Zealand from September to November 2000. Thirty-seven per cent of rural respondents with children (n=420) stated that it was not at all likely that

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Helbling (1996: 12) defines a family farm as an enterprise which is at least half owned by the farmer or farm family, is managed by the farmer, and has a total labour input of no more than three labour units.



any or all of their children would spend over half of their lives working in the rural sector. Another 23 per cent indicated it was 'not that likely'. Thus 60 per cent of respondents considered that their children were unlikely to spend most of their working lives in the rural sector. Forty-six per cent of those rural respondents who owned/part owned a farm or a rurally based business (n=240) reported they were most likely to sell or transfer their farm to a relative such as a son or daughter when they retired. A similar proportion (45 per cent) stated they would sell their farm or business to a third party.

Long-term changes in the numbers and size of farms, the type of farms, the extent of smallholding division, and farm employment have been analysed by Fairweather (1997). He found that average farm size decreased between 1972 and 1990, and then gradually increased to 1996. Between 1972 and 1996 there was an increase in small farms (1-39 ha), fewer mid-sized farms (40-199 ha) and a static number of large size farms (200-399). Subdivision was a major factor in the increase in numbers of farms less than 20 hectares in size over the 1980-1996 period. Dairy farms increased in the small and large size categories, but declined in the middle size range between 1972 and 1993. Over the same period horticultural farms increased in number across all size ranges, while sheep/beef farms decreased or were static across all size ranges. Plantations only absorbed a small proportion of decrease in the number of sheep/beef farms between 1972 and 1996. Other land used for sheep and beef farming has become converted to dairy, horticulture or deer units, or purchased by sheep/beef farmers to increase their holdings (Fairweather, 1997: 2-4, 8).

There have been declines in the number of working owners and permanent workers since 1982, but an increase in unpaid family workers (1972-1996). Deregulation does not appear to have affected this general pattern as these trends began before 1984. There are now more women employed in agriculture and fewer men (1976-1996), but the female participation rate has levelled off over recent years (Fairweather, 1997: 7-8). Labour productivity in the agricultural sector (4.3 per cent per annum) grew faster than the annual rate of increase (2.9 per cent) recorded for the national economy between 1987 and 1995 (Journeaux, 1996: 7).

Fairweather *et al.* (2000: 22-23) compared changes in full-time equivalent (FTE) employment in agriculture and forestry from 1986 to 1996. They included on-land and processing activities in the analysis of employment data. Employment declined in both sectors over this period; with forestry falling by 26 per cent and agriculture by 16 per cent. Most of this decrease occurred between 1986 and 1991 for both sectors, although forestry declined (36 per cent) at over twice the rate of agriculture (15 per cent). From 1991 to 1996 employment in forestry increased, while it decreased further in the agricultural sector. The increase in forestry employment reflected the rapid increase in new planting which occurred during the early 1990's. Processing employment fell in both sectors over this ten year period. Employment in forestry processing fell from 22,929 to 16,303 FTEs, while employment in agricultural processing declined from 50,511 to 34,431. In the latter sector much of this decrease was contributed by restructuring of the freezing industry (Lynch, 1996: 142).

### *Farm management and labour*

Agricultural production is different from other types of capital production as it mainly flows with the rhythm of biological processes. Labour demands vary by season and much of the production is due to the maturing processes of plants and animals. Although members of the family often have daily tasks to perform on the farm, they also provide the principal farmer with a reserve pool of labour to meet the peaks in seasonal demand. Family-based farming, therefore, blurs the boundary between the enterprise and the household, and makes the understanding of women's and men's work on farms complex. The employment of women and men off-farm influences the way labour is organised on the farm. Women who are employed off-farm allow men to work full-time on the farm, but this may bring additional labour constraints (Meares, 1997: 26, 29).

Two international studies of farm families in the United States and Australia illustrate how adjustments by farm families to different farming practices and deteriorating economic conditions changed the on- and off-farm labour contributions of men and women. Meares (1997) studied the effects that adopting sustainable farming practices had on the labour contributions of six farm couples in south eastern Minnesota (United

States). The farmers (all men) reported that they had significantly reduced the amount of time they spent on farm work and management since they switched to rotational or seasonal grazing. The large decrease in men's labour did not result in more leisure time for their womenfolk, however, as the reproductive and community spheres in which the women contributed most of their labour did not experience the radical changes that occurred in the farm's productive sphere (*ibid*: 34, 37).

Argent (1999) investigated how 37 farm families on Kangaroo Island (South Australia) had adjusted to the collapse of the wool market and the rapid increase in farm debt during the 1980's. Many of the families worked harder to reduce the input of paid labour. Others managed their farms on 'autopilot' by avoiding major expenditure and unnecessary toil. Both of these strategies required flexible combinations of on- and off-farm work by men and women. Off-farm work was a double-edge sword for the women. Although their work generated additional income, provided the opportunity to advance their careers, and enabled them to socialise away from the farm, the financial pressure under which they toiled generated considerable personal stress. The typical experience of the women in the sample was a 'double day' of on- or off-farm work and domestic household tasks. Some farm families, whose financial position was especially vulnerable, tried to establish alternative on- and off-farm enterprises to reduce their reliance on the farm business and improve their cash flow (Argent, 1999: 10,12).

Some farmers in New Zealand have found alternative ways of increasing their income. They have done this through an innovation in the production, or marketing, of their farm product or service. Giera and Martin (2000) interviewed 15 pastoral farmers from Canterbury and Southland during 1997 and 1998. They note that most entrepreneurial farmers regarded goal setting as part of their business, although this was not usually committed to paper. These farmers had changed their focus from production based goals to improving parts of their extended business or by general expansion. They accepted that a certain degree of risk was inevitable given their concern to expand the business. Entrepreneurial farmers generally had the confidence to manage their business without the aid of a farm management consultant, and used a wide range of information sources. When their entrepreneurial activity involved an off-farm enterprise they were more likely to obtain expert advice. They still regarded themselves as primarily farmers, but with a 'wider vision' of their farm business than their 'conventional' counterparts. Their main motivation for establishing an entrepreneurial business was to increase their farm profits. Other reasons they cited were their dissatisfaction with existing methods of marketing farm products, their boredom with their current system of farming, and the opportunity they had to start a new venture (Giera and Martin, 2000: 3-6).

Entrepreneurial behaviour by New Zealand farmers is not restricted to their farm business however. Many farm families have also established alternative enterprises on their properties to reduce their dependency of the farm business as a source of income. Taylor and his colleagues conducted interviews with respondents from 58 farms with alternative enterprises in the Ashburton, North Canterbury and Manawatu-Wairarapa districts during 1995. The types of alternative enterprises included in the study were farm tourism, specialist horticulture/nurseries, agricultural processing (non traditional and organic), food processing, viticulture and wineries, agricultural services, general services, light manufacturing, handcrafts, and fashion. Twenty-two of the farms (38 per cent) had enterprises that were related to the tourism industry. The authors found that seven of the farms had a mix of three or more ventures operating in parallel (e.g. garden tours, nursery, catering for tourists). Fifty-three per cent of the enterprises were "financially and structurally independent" of the farm operation, while 40 per cent were integrated with the farm operation. Forty-three per cent were full-time operations, while the remainder were either operated on a part-time or seasonal basis (Taylor *et al.*, 1997: 21-30). Twenty-six people from 21 (36%) of the farm households had off-farm jobs. This relatively high level of off-farm employment among households operating alternative enterprises indicates that they were involved in pluriactivity which generated income from multiple sources (*ibid*: 56-57).

Off-farm employment has become a common practice on New Zealand farms. An analysis of 1991 census data for three study districts and New Zealand as a whole by Taylor and McCrostie Little (1995: 67), for instance, revealed that 37 to 39 per cent of farms had one or both adults of the farm family employed off the

farm. The income earned from off-farm employment allows farm families to avoid drawing funds from the farm business to meet the needs of the household, and, where possible, allocate funds for development of the farm. (Taylor and McCrostie Little, 1995: 87).

Other New Zealand farmers have increased their income by converting their properties to another form of land use. Most of the growth in horticultural production in the Bay of Plenty during the 1970's and early 1980's, for instance, was the result of dairy farms being subdivided into smaller blocks producing kiwifruit and other land-intensive crops. A typical pattern in the Katikati district was for an older dairy farmer to split up his property among his children who then established themselves as kiwifruit growers. The operators of the pack houses, who were often orchardists themselves, purchased orchards and formed syndicates during the 'bust' phase in the mid 1980's. By the early 1990's, however, the trend was towards specialist pack houses rather than individual growers having a role in the packing of the crop. Many orchardists were only working part-time on their holdings at this time. They employed specialist contractors for seasonal tasks such as spraying and mowing, and hired contract gangs for picking, pruning and thinning instead of directly employing casual labourers. Other orchardists had aggregated and consolidated their holdings either by lease or purchase (McClintock, 1998: 2, 6-7). Elsewhere in New Zealand dairying has superseded other forms of agricultural production. In the early 1970's, following the impact of irrigation, dry land sheep farmers on the Waitaki Plains were replaced by younger families from the down lands of North Otago. They increased stock numbers on their farms, but by the 1980's they began to be replaced by families from the North Island who converted the properties to dairy production. Two companies, Tasman Agriculture and Applefields, also purchased properties on the Waitaki Plains for dairy farms during the late 1980's. Sharemilkers on these corporate farms were contracted for more than the customary three year period of family farms (McCrostie Little *et al.*, 1998: 5-7).

#### *Agribusiness, processing and producer boards*

While farmers have changed their management labour practices on-farm, and sought alternative ways of increasing returns by changing their land use or establishing alternative enterprises on their properties, the companies involved in the large-scale commercial processing of farm commodities have also had to reorganise their operations in response to competitive pressures in the global market. The fortunes of the primary and secondary sectors of agricultural production are closely linked, but they respond to market forces in fundamentally different ways.

Nigh (1999) has compared multinational companies and small holder producers in terms of their contribution to the global food system. Multinational companies use their abundant capital and advanced technology for large-scale commercial production, whereas small holders use family labour and local knowledge to supply local and regional markets. Small holder production is most prevalent in Third World countries, although this type of agriculture is also found in North America, Europe and Australasia, as organic foods and other specialised products become more popular with consumers.

Small holders, unlike capitalist firms, do not switch in and out of a particular economic activity purely on the basis of marginal returns and opportunity costs. Multinational agribusiness, on the other hand, is characterised by large-scale production, a uniform and narrow genetic base, the increased use of chemical fertilisers and pesticides, the replacement of human labour with technology, and the use of cost accounting (Nigh, 1999: 262-263). Companies use contracts to control the production parameters and marketing conditions of farmers who increasingly resemble workers in an industrial process. For example, corporations supply the birds, feed, and veterinary supplies to contract poultry farmers who have little say in any aspect of the production system (*ibid*: 277-278).

Australian farmers have become increasingly dependent on agribusiness for chemical inputs, commodity processing, and marketing. Their association with these corporate networks means that the ownership of farm

land is no longer the sole factor enabling them to make decisions about land use whether it is for production or conservation purposes (Rickson *et al.*, 1999: 267).

In New Zealand, a spate of mergers and plant closures occurred among major agribusiness companies during the late 1980's and early 1990's. Two stock and station agents (Wrightson NMA and Dalgety Crown) merged in 1986; two food manufacturers (Watties and Goodman Fielder) and two fertiliser companies (East Coast Fertiliser and Ravensdown) in 1987; and two meat processing companies (Waitaki International and Alliance) in 1990. Agribusiness companies responded to reduced farm expenditure by adopting cautious financial management policies; reducing labour costs (through the shedding of staff and/or by introducing labour saving technology); improving product quality; introducing new products; and changing their pricing and marketing policies (Wilson, 1995: 419-420). They also closed many of their facilities in smaller rural towns, and concentrated their operations in regional centres.

The production of meat in New Zealand was formerly based on the bulk supply of livestock to large-scale freezing works. The carcasses were transported to overseas markets for final preparation and retailing (Le Heron and Roche, 1999: 208). After several seasons of a steady reduction in the number of livestock sent to the freezing works during the late 1980's, the meat industry underwent a series of rationalisations which "relieved regional capacity surpluses, oversaw a largely unplanned transfer of ownership from overseas companies to New Zealand (public and private) companies and then to producer cooperatives, and facilitated entry of new companies operating small scale non-union works with more flexible labor practices and lower wages" (*ibid.*: 209).

Processing capacity fell by 25 per cent and employment by 40 per cent during this restructuring process, and the number of companies increased threefold from 11 processor and exporting companies operating 45 plants in 1986 to 32 companies operating 61 plants in 1994 (Lynch, 1996: 142). The ownership of sheep processing plants is now heavily concentrated, with three farmer cooperatives, AFFCO, Alliance and PPCS, accounting for about 70 per cent of the national kill of sheep and lambs between them. By contrast the ownership of beef plants is more dispersed as the typical company in that sector processes just five to seven per cent of the total number of cattle slaughtered (Maughan, 1998: 42).

A medium-sized meat processing company nowadays supplies products that must meet up to 1,500 specifications sought by overseas customers. Controlled atmosphere packaging, developed by the Meat Industry Research Institute of New Zealand, has extended the shelf life of chilled meat products from a few weeks to over four months. This innovation has enabled sea transport to become a cheaper alternative to air freight, and allowed the volume of product further processed prior to export (added value) to increase from 18 per cent to 60 per cent between 1982 and 1994. The seasonal production and supply cycle of livestock farming continues to pose a problem for processors however. The industry has surplus capacity and high fixed costs for much of the production season as it needs sufficient processing capacity to meet peak demands (Lynch, 1996: 143-144).

Industrialisation of the pork industry has seen a sharp decline in the number of registered producers from 1602 in 1984 to 480 in 2000. There has been a parallel consolidation in abattoirs and processing plants. The number of licenced abattoirs fell from 32 in 1990 to 15 in 2000. Bacon, ham and small good processors dropped from 95 in 1990 to 75 in 1997. Pork producers have largely been price takers, but there are signs of vertical integration with a few producer groups moving into wholesaling, and specialist contract production to meet particular consumer demands. The restructuring of the New Zealand pork industry in recent years, while not as advanced as in North America, is following similar trends of large-scale industrialisation (Ryan, 2001).

The dairy industry in New Zealand is vertically integrated. The farmers own the cooperatives that operate the processing plants, while the cooperatives themselves own the New Zealand Dairy Board (NZDB) which markets the industry's products (Nixon, 1998: 88). For much of the 1980's the dairy industry had satisfactory

returns, and profited from the NZDB's success as an international trader. The ability of the NZDB to secure a prominent position in international trade was based on cost efficiencies derived over several decades by the dairy processing sector from the consolidation of ownership, investment in new products, cost reductions, and the upskilling of processing workers and management (Le Heron and Roche, 1999: 209). The other components of the dairy industry are the food processing companies which add value to dairy products, and firms that supply goods and services such as equipment, software and animal health products to farms (Ministry of Agriculture and Forestry, 2001: 2).

Over the last century the ownership structure of the dairy processing industry has evolved from over 150 dairy companies to just four by June 2001. The transformation of the industry from a multitude of district-based cooperatives to a small number regional and national cooperatives accelerated during the last thirty years of the 20<sup>th</sup> century. One farm family in Canterbury, for example, which initially supplied milk to the Midland Dairy Company at Ashburton in the 1970's, has successively sent its output to the Temuka, Alpine, South Island, and New Zealand Dairy Group companies, for processing (Wellwood, 2001: 5).

A significant rise in dairy production in the mid 1990's led dairy cooperatives to further consolidate their processing activities at larger scale plants on fewer sites. The New Zealand Dairy Group, for instance, built the world's largest cheese factory at Lichfield, and a milk powder plant at Waitoa during this period. While further south the Kiwi Cooperative expanded its operations at Hawera by establishing the world's largest milk powder plant there (Nixon, 1998: 91-92). By 1998 the dairy processing sector comprised 12 cooperatives; compared with 50 a decade earlier (Le Heron and Roche, 1999: 209-210). The ownership of processing plants has become even more concentrated since then, with the shareholders of the two major farmer-owned cooperatives, the New Zealand Dairy Group and the Kiwi Cooperative Dairy, supporting a merger proposal in June 2001. The NZDB plans to amalgamate with this giant cooperative by September of this year to form what some observers claim would be the 14<sup>th</sup> largest dairy company in the world (Ministry of Agriculture and Forestry, 2001: 1).

Farmers can participate further up the agro-commodity chain through producer marketing boards and cooperatives. They can use these organisations to obtain farm inputs, research that enhances productivity, and seasonal credit. Where farmers have little control over agro-commodity chains, they are much more exposed to market forces than farmers in industries where control is closer to final demand. Farmers interact with external capital through the supply of inputs, the provision of finance, the marketing of products, and the ownership of technology. They can choose from a variety of organisations for these, and cooperatives play this role in New Zealand (Moran *et al.*, 1996A: 248). Moran and his colleagues (1996A: 255) conclude that farmers in New Zealand have a high degree of control over the processing and marketing of their produce when compared with the corporate domination of agriculture described in the international literature of food regimes.

The producer marketing boards and their associated cooperatives are like major transnational corporations in their general operation and functioning. They help maintain the profitability of family farms in three ways. By acting as processors and marketers they add value to the farm product, although their potential to add value varies according to the product. By joining together to market their products the marketing boards restrict competition among groups of family farmers in international markets. They reduce some of the biophysical dependencies of agriculture by extending the supply of products for as long as possible through processing and sophisticated atmospheric storage which allows them to respond better to changing demand. Producer marketing boards also try to control the biotechnological dependencies that could result in further capitalist penetration of agriculture (Moran *et al.*, 1996B: 173-174).

## COMMERCIAL FISHING

This description of commercial fishing considers the market relationships between fishers and processors in Nova Scotia, the operation of quota management systems and the ownership structure of the New Zealand industry.

### *Market relationships and ownership*

Market relationships between fishers and the firms which process their catch are complex. The most formal economic tie between them is the ownership of vessels by processors, or plants by fishing captains or crew. While the minority interest of processors in vessels or producer cooperatives mainly serves to secure access to the resource or market, majority ownership creates the captive pricing of fish. Informal economic ties take a variety of forms through their need for services (e.g. berthing, storage, refit, loans etc.) and inputs (e.g. bait, supplies, fuel etc.). Social constraints on market transactions take the form of family and friendship networks; ethnic and religious relationships; and commitments to common values such as cooperativism, free competition and community solidarity. Another form of constraint relates to political factors such as patronage and the state's control of access and harvesting effort. In the Maritime Provinces of Canada, for instance, there are offshore and inshore markets. The offshore vessels are company owned and thus fish prices in this market are artificially administered prices. The inshore market was previously characterised by competition and price stability, but now suffers from monopsonistic imperfections because of the dominance of major processors (Barrett and Apostle, 1989: 3-4).

Barrett and Apostle (1989: 8-11) interviewed 451 captains of fishing vessels based in Nova Scotia. From the data they developed a boat typology based on ownership, scale and technological factors. They distinguished between three types of fishing enterprises - the branch plant, petty capital and direct producer sectors. The *branch plant* sector comprises offshore vessels which are primarily "branch plant facilities run by non-owning managers (captains) with a proletarianized work force" (*ibid*: 9). Ties to the port market are a function of ownership, and prices have no relationship to supply and demand. The crew have negotiated piece wages, and managers have productivity incentives but with little latitude as to the place and time of fishing, the species of catch, and its sale price. The *petty capital* sector is defined by three factors: independent ownership of the vessel; intermediate level of technology that is often single-gear in nature; and the accumulation of capital by the owner. The primary advantage of this fleet is its geographic mobility. Profits are reinvested through family based enterprises in other boats and onshore processing and handling facilities. The *direct producer* sector is defined by the ownership of the boat, and the small-scale nature of the fishing operation. The vessels are labour intensive. They have small crews, high levels of self-exploitation, and little differentiation between captain and crew with regard to the distribution of any surplus. The multiple gear vessels (e.g. line, trap and net) have a high degree of adaptability and flexibility to harvest a variety of species during different seasons, although their mobility is constrained by their size. Single gear vessels tend to harvest a particular fishery to the exclusion of others.

The offshore fleet (vessels over 95 feet in length) operating in Nova Scotian waters is a distinctive entity that is integrated with the onshore processing sectors at the formal and informal levels. The inshore sector is highly differentiated by scale, technology, location, the nature of vertical ties to processors, and social relations at the enterprise level. Processors only provide inputs and services to fishers when it is necessary to secure their catch as they constitute an overhead cost to the former. Direct ownership of vessels is a substantial investment risk and is usually avoided by all except the largest companies. It is better for processors to allow direct producers to remain nominally independent and assume the risks inherent in the fishery (Barrett and Apostle, 1989: 20-21).

Barrett and Apostle's portrayal of market relationships between fishers and processors, and types of fishing enterprises, provides a conceptual framework for generating questions about the structure of the New Zealand fishing industry that need to be investigated during a later phase of this research project.

## *Quota management systems*

Governments introduced quota management systems during the late 20<sup>th</sup> century to ensure fish stocks would be harvested on a sustainable basis, and to provide property rights to fishing operators. State regulation which restricts access to a particular fishery to individual quota holders, however, often does not recognise that for many fishing communities the harvesting of the ocean is as much about social relationships between kin and friends as it is about economic and property rights. When these quotas are established they may create an economically advantaged group of fishers and exclude other groups in the community whose livelihood depends on the fishery. Davis and Bailey (1996: 254), who studied the implementation of an individual quota system for a snow crab fishery in Canada, observe that the interests of other people, such as crew, families, workers at processing plants, local fish buyers, merchants, service sector workers and professionals, should also be considered in the design and implementation of a community-based fishery management system.

Duncan (1995) points out that the main effect on the introduction of the quota management system in New Zealand in 1986 was to exclude small-scale, independent, fishers from access to the resource, which gradually come under the control of large corporations. The industry was restructured by eliminating part-timers including Maori living in rural communities, fishers who worked in other seasonal industries (e.g. forestry, meat works) and lifestyle fishers. No provision was made for the crew of fishing vessels as the 'catch history' by which quota was allocated accrued to owner-operators, not to deckhands. Nor did crew receive any compensation for their loss of jobs when excess quota was brought back by the government.

After the introduction of the quota management system (QMS) there has been a lot of trading of quota. Processing companies have purchased or leased quota, and then subleased it to other fishers who agree to supply the quota, and any other quota they may own, to the companies. The trading of ITQ has separated the ownership of quota from harvesting rights, particularly in the case of the rock lobster fishery, and has reinforced the cultural barriers between the owners and leaseholders of quota. It has also pushed up prices, making it difficult for younger men to enter the industry. Processing companies also operate deep water fishing vessels which supply their factories. Thus they derive financial returns from their ownership of quota and the processing of a particular species, while lease-dependent fishers only generate revenue from their harvesting activities. Leaseholders pay these companies rental for the quota whether they catch the limit or not, and this has put some of them under financial pressure. Fishers who own some quota are in a better position than lease holders, as they have some leverage to purchase or lease other quota and can choose the processing company to which they sell their catch (Baines and McClintock, 2000: 8-10). The exclusion of small-scale fishers from the resource contributed to the ongoing decline in the number of registered commercial fishing boats in New Zealand from 2,800 in 1992 to 1,860 in 1999 (Judd, 2001: 118).

## *Ownership structure of the NZ fishing industry*

Thus there has been a concentration of ownership of quota, larger vessels capable of harvesting deep sea species, and processing facilities at the major ports, while there are fewer operators of smaller boats based at minor ports such as Riverton, Moeraki and Havelock (McClintock *et al.*, 2000: 2). Thirty companies owned 91 per cent of quota in December 1995, while the three largest groups of these companies - Sealord Products Ltd, Sanford Ltd and Amalgamated/Talleys - between them controlled 57 per cent of the total allowable commercial catch (New Zealand Fishing Industry Board, nd: 34-35).

Large sums of capital (i.e. in excess of \$10 million) are required to purchase vessels capable of harvesting deep water species, such as hoki, at a low unit cost. The major fishing companies can also achieve economies of scale that are not available to smaller firms by distributing peak harvests among several processing plants at various locations around the country (Sharp, 1998: 70-72).

Sealord Products Ltd operates a fleet of 25 vessels with a workforce of 500. The fleet is a mixture of bottom long liners, fresh-fish trawlers and factory trawlers. Some of these vessels are owned by Sealord, while others

are chartered. Sealord harvested 170,000 tonnes of fish and shellfish in the year 2000, and 90 per cent of that catch was exported (Maritz *et al.*, 2001: 106). Another major company, Sanford Ltd has nine fish and aquaculture processing factories at major fishing ports and marine farming areas around New Zealand (Sanford Ltd, 2000). It has 11 freezer vessels operating offshore, five of which are chartered from Korean and Japanese owners, and 24 smaller inshore boats. The major species harvested by the offshore vessels are hoki, orange roughy, ling, tooth fish, scampi and squid, while the inshore boats catch a variety of species including snapper and groper (Sanford Ltd, 2001). Sanford reported sales revenue of \$342 million, and an operating surplus of \$55 million for the year ended 31 August 2000, and three-eighths of its shares are owned by Amalgamated Dairies Ltd (Sanford Ltd, 2000: 30, 47).

Te Ohu Kai Moana (the Treaty of Waitangi Fisheries Commission) is also a major stakeholder in the industry. It managed some \$700 million of quota and assets in 1996, including shareholdings in Sealord Products Ltd (50 per cent) and Moana Pacific Fisheries Ltd, on behalf of Maori (Statistics New Zealand, 1997: 467). Te Ohu Kai Moana (TOKM) has since acquired ownership of Sealord's entire quota<sup>5</sup> following Brierley Investment's sale of its half share of the company to Nissui, a Japanese food company. TOKM now owns 41 per cent of quota through Moana Pacific Fisheries Ltd and Sealord. Moana Pacific is New Zealand's largest inshore fishing company, with annual sales of around \$100 million. Other Maori interests, such as Ngai Tahu, own about six per cent of the total allowable commercial catch. Sixty-three iwi operated fishing businesses have been established since 1993; many of them based on discounted leases of pre-settlement assets (Judd, 2001: 118).

Although the ownership of quota has become more concentrated in the hands of a few companies, there are still many smaller fishers remaining in the industry. As Table 4 indicates there were 1,925 geographical units with 4,843 FTE persons engaged in harvesting activities in 1999, while a further 162 geographic units employed 5,310 FTE persons to process seafood. Most of the jobs created in the fishing industry since 1991 have occurred in seafood processing (a 48 per cent increase), although the number of people engaged in aquaculture has grown by 63 percent from 590 to 960.

Table 4: *Activity/Geographic Units and Employment in Fishing and Seafood Processing Activities - February 1990 and 1999*

Activity	1990		1999	
	Number of Activity Units	Persons engaged	Number of Geographic Units	Persons engaged FTE
Fishing by a variety of methods	1,683	4,114	1,588	3,883
Aquaculture	200	590	337	960
Seafood Processing	143	3,588	162	5,310
<i>Total Fishing &amp; Processing</i>	<i>2,026</i>	<i>8,292</i>	<i>2,087</i>	<i>10,153</i>

Source: Department of Statistics, 1992: 37-38; Statistics New Zealand, 2000: 61.

Aquaculture has become an important sub sector of the fishing industry in New Zealand. For example, mussel farming gradually replaced small-boat wet fishing as the major marine activity in the Marlborough Sounds over the last three decades of the 20<sup>th</sup> century. Although the first farms in the Sounds were mainly family owned, there was shift to share farming arrangements and the use of contractors when owners realised the large time commitment required to farm mussels. Nowadays there are fewer 'hands-on' owners as many family operators have sold their farms to companies that employ contract workers to harvest the mussels. Furthermore, there has been an increased concentration of farm ownership, with two companies, Pacifica and Sandford, owning about 150 farms between them (Baines *et al.*, 2000: 6).

<sup>5</sup> 150,000 tonnes, or 23 per cent of the national total.



## MINING

Gold and coal mining have been important economic activities in New Zealand since the 19<sup>th</sup> century, and this section discusses recent changes in the ownership structure of these industries.

The mining sector in New Zealand, as Table 5 reveals, consisted of just over 100 geographic units which employed about 1200 FTE persons in 1999. The workforce of the coal mining industry has declined by 19 per cent since 1990. The employment trend for gold mining over this period is difficult to discern, however, as the numbers of persons engaged in this category were included as part of a much broader group of activities (i.e. non-ferrous metal ore mining) for the earlier data.

Table 5: *Activity/Geographic Units and Employment in the Mining sector - February 1990 and 1999*

Activity	1990		1999	
	Number of Activity Units	Persons engaged	Number of Geographic Units	Persons engaged FTE
Coal mining	75	941	47	760
Non-ferrous metal ore mining (1)	144	492	-	-
Gold ore mining	-	-	55	450
<i>Total coal and gold mining</i>	<i>219</i>	<i>1,433</i>	<i>102</i>	<i>1,210</i>

Source: Department of Statistics, 1992: 37; Statistics New Zealand, 2000: 61.

Notes: (1) Includes gold ore mining.

The government was the major operator in coal mining until the 1980's. When mining activity peaked during the 1950's there were 167 coal mines in New Zealand. The state owned 37 of these mines and employed two-thirds of the mining workforce. By the 1980's there were only 100 mines remaining - 16 belonged to the state and the remainder were small owner-operated enterprises. In 1987 the state-owned mines were transferred to the Coal Corporation (later renamed Solid Energy) which later formed joint ventures with multinational companies to develop new mines (Fitzgerald, 1997: 4).

A recent trend in the coal industry has been the closure of many small private and cooperative mines, with less than 40 of them still operating. Although some closures occurred because of economic factors, others were the result of new government regulations such as the Resource Management Act and the Occupational Safety and Health Act (Fitzgerald, 1997: 3). Nowadays, for example, there are the only three coal mines currently operating in the Ohai-Nightcaps district of Western Southland: the Wairaki mine owned by Solid Energy and two small private mines owned by Southern Mining Limited (Fitzgerald, 1998: 4). Solid Energy also owns eight large coal mines in other parts of New Zealand: three underground pits and two open cast operations on the West Coast, and two underground pits and an open cast operation in Waikato (Solid Energy, 2000: 4).

Two large open cast mines owned by multinational companies dominate the gold industry in New Zealand: Martha Hill at Waihi and Round Hill at Macraes Flat in North Otago. The Martha Hill mine is operated as a joint venture by two Australian companies (Normandy Mining Ltd and Otter Gold Mines Ltd), and employs 234 people (Slight, 2001: 29). While the Round Hill mine, which is owned by GRD Macraes Ltd, has a total company and contractor workforce of 214 (Taylor *et al.*, 2000: 10). Most of the country's gold is produced by these two mines, with the remainder coming from small alluvial operations on the West Coast, Otago and Southland (Fitzgerald, 1997: 6).

## ENERGY

The energy sector in New Zealand comprises the extraction, processing, and supply of natural gas and oil, and the generation and distribution of electricity. Although there are linkages between the gas and electricity industries in terms of generation and distribution, their ownership structure is examined separately here.

The energy sector had 428 geographic units employing over 7,000 FTE persons in February 1999 (see Table 6). Just under four-fifths of the workforce of the energy sector was employed in the electricity supply industry. Employment in the sector halved between 1990 and 1999. Although most of the job loss occurred in the electricity industry, other parts of the sector (i.e. gas supply and petroleum refining) also employed less than half the people they did in 1990.

*Table 6: Activity/Geographic Units and Employment in the Energy sector - February 1990 and 1999*

Activity	1990		1999	
	Number of Activity Units	Persons engaged	Number of Geographic Units	Persons engaged FTE
Oil & gas extraction	12	136	23	570
Petroleum exploration	75	535	8	9
Petroleum exploration services	-	-	26	50
Oil exploration and mining & quarrying consultants	66	163	-	-
Petroleum refining	16	843	2	340
Gas supply	33	1,080	28	490
<i>Total oil &amp; gas</i>	<i>202</i>	<i>2,757</i>	<i>87</i>	<i>1,459</i>
Electricity supply	438	11,268	341	5,580
<i>Total energy sector</i>	<i>640</i>	<i>14,025</i>	<i>428</i>	<i>7,039</i>

Source: Department of Statistics, 1992: 37, 40, 43; Statistics New Zealand, 2000: 61-62, 64.

### *Natural gas and oil*

Natural gas and oil are produced and processed in the Taranaki and Northland regions of New Zealand. The production of gas is dominated by the Maui and Kapuni fields which together provided 95 per cent of national output in 1995. The other five per cent is produced by the McKee, Waihapa and Ngatoro fields (Statistics New Zealand, 1997: 480). The offshore Maui gas field produces three quarters of New Zealand's supply of natural gas or about 30 percent of the country's total energy needs. A third of the natural gas production is used to generate electricity. Investment in natural gas fields is a risky venture, with exploration wells only having only one chance in 23 of becoming economically viable. A deep offshore well may cost in the region of \$12-15 million to drill, while an onshore well may cost around \$3 million (Barber, 1996: 2-3).

The Maui field is owned by Maui Development Limited, a joint venture of Shell Petroleum Mining Ltd and Todd Petroleum Mining Ltd. All of the gas production from the Maui field is channelled through the Crown which sells it under three contracts to the Natural Gas Corporation and for on-sale to electricity generators and gas retailing, Contact Energy for electricity generation and gas retailing, and to Methanex for the production of methanol. Contact Energy (51 per cent owned by Edison Mission Energy of the USA) and the Natural Gas Corporation (64 per cent owned by Australian Gas Light) are the major gas wholesalers in New Zealand, and the latter owns and operates the country's high pressure gas pipelines. Gas is reticulated from the high pressure pipelines through low pressure networks that are owned by distribution companies (e.g. Nova Gas and Wanganui Gas) to domestic and commercial consumers. Some gas retailers also sell electricity (e.g. Fresh Start, On energy, and Contact Energy), while other companies (e.g. Auckland Gas) only sell gas (Grant Samuel and Associates Ltd, 2001: 9-11).

## *Electricity*

The electricity industry in New Zealand is divided into three sub sectors: retail, distribution, and transmission. Retail companies generate electricity and/or sell electricity to consumers, distribution companies own the local networks that deliver electricity from the high voltage lines to end users, and Transpower, a state owned enterprise, owns the high voltage lines which connects the generators to the national system (Grant Samuel and Associates Ltd, 2001: 5).

The generation and transmission of electricity in New Zealand was transferred from a government department to a state-owned enterprise, the Electricity Corporation of NZ (ECNZ) in 1986. Six years later (1992) electric power boards and municipal electricity departments were corporatised. In 1994 the government separated transmission from generation by establishing a new state-owned enterprise - Transpower - to operate the national grid. The following year Contact Energy was split off from ECNZ and privatised to provide competition in the generation of electricity. ECNZ was further divided into three state-owned generators in April 1999: Genesis Power, Meridian Energy and Mighty River Power. The government sold 40 per cent of its shares in Contact Energy to Edison Mission Strategy, and another 60 per cent were sold to the public in May 1999. After the sale of Contact Energy the private sector provides 40 per cent of the country's electricity generation (Energy Markets Policy Group, 2001: 2-3). Generators sell their electricity through the New Zealand Electricity Market. This wholesale market allows prices to be established at several locations around the country, and retailers and other large users to purchase electricity from a pool of generators (Grant Samuel and Associates Ltd, 2001: 6).

The Electricity Industry Reform Act of 1998 required line (distribution) businesses to be operated separately from retail and generation businesses. Most companies completed this process of ownership separation by 1 April 1999. Most electricity companies retained ownership of their line business and sold their retail business. At present there are 31 line businesses operating under a range of ownership types including public companies and community owned trusts. When electricity companies sold off their retail businesses, Meridian, Genesis and Mighty River took the opportunity to expand into the retail market. Trust Power and TransAlta (two former integrated distribution and retail companies) and Contact Energy also purchased some of these retail businesses (Energy Markets Policy Group, 2001: 4). The Natural Gas Corporation purchased Trans Alta in October 2000, and rebranded its combined retail operations as "On energy" to form the largest energy retailer in the country (Grant Samuel and Associates Ltd, 2001: 8). There are now ten electricity retail companies, and during the first year of competition over 81,000 consumers switched to another electricity supplier (Energy Markets Policy Group, 2001: 5). Retailers pay line companies for the delivery of electricity to end users, and other retail companies for the use of electricity meters they do not own (Grant Samuel and Associates Ltd, 2001: 7, 9).

## **TOURISM**

This section begins by describing the overall ownership structure and development of the tourism industry in New Zealand, then closely examines rural tourism, farm based tourism, and Maori involvement in the industry to illustrate the role of small-scale enterprises alongside a few large operators in this sector.

### *Ownership structure of the New Zealand tourism industry*

The tourism industry in New Zealand comprises a mix of a large number of small enterprises and a handful of medium to large operators. Thus the industry has a dual nature as a few large operators (e.g. Air New Zealand, Tourism Holdings Ltd) influence the flow of international visitors into the country, where they integrate their operations with the activities of a large number of smaller tourism enterprises (McDermott, 1998: 335). The four largest private sector businesses operating in New Zealand are CDL Hotels NZ Ltd, Tourism Holdings Ltd, Tranz Rail, and Air New Zealand. The public sector works alongside the private

sector to develop and promote the industry through several central government agencies (e.g. NZ Tourism Board, Office of Tourism and Sport, Department of Conservation) and regional and tourism organisations funded by local government (Collier, 1999: 108-116).

There are several subsectors of the industry: transportation, accommodation, attractions, activities, ancillary services and sales (Collier, 1999: 14). Thus many types of businesses provide services to tourists. Some enterprises which provide accommodation or attractions, for instance, are mainly oriented to the tourist market, whereas others, such as retailers and transport operators, sell their goods and services to a wider range of customers. Many firms in the tourism industry, particularly motels and souvenir/craft shops, are small, employing only two to five staff. Mid range hotels, motor inns, motels and backpackers hostels are predominately New Zealand owned. While in other parts of the industry, such as international class hotels and large tour operators, a number of large enterprises have emerged through vertical and horizontal integration (Pearce, 1996: 193-194).

Although over 20 international airlines bring visitors to New Zealand, the trans Tasman route is dominated by Air New Zealand and Qantas, and the domestic routes by Air New Zealand (McDermott, 1998: 333). Formerly owned by the government, Air New Zealand was purchased by a consortium comprising Brierley Investments Ltd (65 per cent), Qantas (20 per cent), and American Airlines (7.5 per cent) and Japan Airlines (7.5 per cent) in April 1989 (Johnston, 1996: 186). Since then it has become publicly listed, and the three international airlines which originally took a stake in the company have sold their shareholdings. Brierley Investments Ltd has reduced its shareholding to just over 30 per cent of Air New Zealand's issued capital, while the other major shareholder, Singapore International Airlines, owns 25 per cent (Air New Zealand, 2000: B47). Air New Zealand has formed strategic alliances with United Airlines and Singapore International Airlines, and last year acquired full ownership of Ansett Australia. With the result that over the last ten years Air New Zealand has evolved from being a short and long haul outbound airline focussing on Australian and North Atlantic destinations, to a medium haul inbound airline servicing Asia and North America (McDermott, 1998: 345). The annual total of passengers carried by Air New Zealand has grown from 4.8 million in 1991 to 7.8 million in 2000, while its operating surplus has increased from \$18 million to \$164 million over the same period (Air New Zealand, 2000: B39-B40).

The only other major competitor for Air New Zealand in the domestic market for much of this period was Ansett New Zealand. Established by Ansett Australia, Newmans Ltd and Brierley Investments Ltd in 1987, Ansett New Zealand succeeded in obtaining a reasonable share of the market. Hampered by a series of annual losses, however, it was unable to remain a financially viable operation (Johnston, 1996: 186). Ansett New Zealand was eventually sold in 1999 to Tasman Pacific Airlines which traded as Qantas New Zealand, but the new company was only able to survive until April 2001 when it became insolvent and ceased operating. Qantas Australia has helped to fill some of the gap left by the departure of Air New Zealand's main competitor by commencing services on the major domestic routes in conjunction with a local operator, Origin Pacific.

The majority of international class hotels in New Zealand are owned by overseas companies. Southern Pacific Hotels Corporation, for example, purchased THC resort hotels, and acquired or built hotels in the main urban centres. It developed a national chain of 15 (in 1996) hotels operating under the THC, Centra, Travelodge and Parkroyal brands. CDL Hotels New Zealand Ltd, a subsidiary of CDL Hotels International, which is owned by City Developments Ltd of Singapore, is the largest hotel owner-operator in NZ with 19 hotels and 1,700 employees. In 1993 it acquired the Quality Hotel chain and five Kingsgate hotels (Pearce, 1996: 194).

Other major companies operating in the tourist industry are mainly New Zealand owned. Tourism Holdings Ltd, a public listed company, is one of the country's largest tourist operators. It had a gross turnover of \$195 million for the year ended 30 June 2000. It has a broad range of services including inbound operators and market wholesalers with offices in Australia, Japan Singapore and the USA; sightseeing; rental cars and campervans; scenic boat trips; helicopter flights; the Waitomo Glow Worm Caves; and Kelly Tarlton's

Underwater World in Auckland (Tourism Holdings Ltd, 2000: 2, 6-7). Through its network of related activities Tourism Holdings is able to move visitors around the country by several modes of transport, and provide them with a wide range of activities. Another publicly listed company, Shotover Jet Ltd, whose main shareholders are Ngai Tahu Investments Ltd (47 per cent) and Armada Holdings Ltd (33 per cent), reported a group revenue of \$23 million for the June 2000 year. Shotover Jet has a less comprehensive range of activities for tourists than Tourism Holdings. Its activities include jet boating on several rivers in the Queenstown-Lakes district and the Waikato, and visitor attractions such as the Christchurch Tramway and Rainbow Springs at Rotorua (Shotover Jet Ltd, 2000: 3, 5-7, 31). Two privately owned companies with a regional focus are Fullers, which operates ferries and tours in Auckland and Northland, and Fiordland Travel, which operates tours in the Southern Lakes area.

Operating on a much smaller scale than these major companies with international links are a myriad of enterprises which employ the vast majority of people working in the tourist industry. West *et al.* (1994) conducted a survey of 232 small tourism businesses in 1994. The main activities of these businesses were guided nature and history tours (22 per cent), hunting and fishing (21 per cent), kayaking and canoeing (13 per cent), rafting (10 per cent), scenic flights (7 per cent), horse treks (7 per cent), jet boating (6 per cent), boat cruises and charters 14 (per cent). Eighty-three per cent of respondents were using their own capital for half or more of their funding requirements, and 70 per cent of them had no previous tourism experience prior to establishing their business. The 183 businesses providing details of staff numbers employed just 695 part-time and 481 full-time workers between them.

#### *The development of the tourism industry*

The expansion and consolidation of existing operators and products, and the introduction of new products, contribute to the development of the tourism industry. At Te Anau, for instance, a new group of smaller tourism operators providing eco-tourism products has emerged over the last ten years to complement the transport and tour products of the much larger Fiordland Travel. These operators include some long-term residents of Te Anau who are diversifying their fishing, farming and retail activities, as well as newcomers who are attracted to the area. The new tourism products include kayaking, wilderness walks, fishing, deep sea diving and sailing (Warren *et al.*, 2000: 6).

Community based initiatives in the tourism industry also contribute to the development of the industry, although local control may be lost to national and multinational companies when large sums of capital are required to expand the business. An example of this loss of local control of a prime tourism destination is the Mount Hutt skifield which was established with community support. A public company, Mt. Hutt Ski and Alpine Tourist Company, was formed in 1974. Its constitution stated that at least 75 per cent of the shareholding was to be locally based. By 1986 the company was unable to expand as local financial resources were insufficient. A controlling interest in the company was purchased by Leisureland Holdings of Auckland. After the share market crash in 1987, Leisureland Holdings was taken over by Japanese investors (the Victoria USA Company) who wanted to diversify their investments from clothing retailing into ski sports enterprises. They invested considerable amounts on the mountain, including snow making equipment. In 1994 Victoria USA was bought out by the Mount Cook Company, which itself had been taken over by Air New Zealand (McCrostie Little and Taylor, 2000: 3-4).

#### *Rural tourism*

Warren and Taylor (1999: 10-13) have developed a data base of over 3,000 rural tourism enterprises. They note that at least one in five tourism enterprises are located in a rural area as there were about 16,000 tourism enterprises in New Zealand<sup>6</sup> at the time the database was compiled. There are greater concentrations of rural

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An estimate of the Tourism Industry Association NZ.

tourism activity in particular regions of the country. Fifty-six per cent of enterprises in the South Island are located in Canterbury and Otago, while in the North Island the greatest concentration of activity is in the Waikato and Manawatu-Wanganui regions. Four-fifths of rural tourism businesses operated in the accommodation, activity and retail sectors (see Table 7).

*Table 7: Rural tourism enterprises in New Zealand*

Main tourism activity	Number of enterprises	Per cent of total enterprises
Accommodation (1)	1,430	47
Activity-based	619	20
Retail	407	13
Gardens	214	6
Food outlets	181	6
Wine/winery	87	3
Culture and heritage	82	3
Undefined	3	-
TOTAL	3,023	100

Source: Warren and Taylor, 1999: 11

Note: (1) 306 farmstays, 207 homestays, 196 camping grounds, 164 hotels, 158 motels/self-contained flats, 151 lodges, 137 Bed and Breakfast enterprises, 71 backpackers, 34 cottages, and 6 others.

After compiling the data base Warren and Taylor surveyed a thousand rural tourism enterprises with a response rate of 50 per cent. The enterprises in this study had a median age of 13 years, and only a few of them had been operating for more than 30 years. Two-thirds of operators who responded to the survey reported their gross annual turnover and drawings. Gross turnover ranged from \$40 to \$13 million, but the median was only \$25,000. Forty-three per cent of the enterprises had gross turnovers of under \$20,000, and a quarter of them reported turnovers of \$100,000 or more. The levels of capital operators invested in their enterprise ranged from none to over \$200,000. About a fifth of the enterprises in the survey had long term loans. These loans ranged from \$130 to \$2.3 million, while the average long-term loan was \$164,000. Just under a fifth of the enterprises had short-term loans. The short-term loans were from \$800 to \$1 million, with the average being \$42,000 and the median \$10,000. The most commonly reported assets were land/farm, houses and vehicles that were used for multiple activities, although some enterprises had special-purpose buildings, vehicles and equipment. Only a third of the operators had prepared business plans, and those plans were likely to be for a period greater than a year, contain business goals, include a mission statement, and have financial targets and budgets (Warren and Taylor, 1999: 17-18, 23-30).

Most operators participating in the survey combined their tourism enterprise with farming (40 per cent) or paid employment (37 per cent). Slightly more women than men were working owners because of the dominance of accommodation and retail (mainly craft) enterprises. More women were employed in rural tourism overall, but men predominate in full-time positions, whereas women are more prevalent in part-time positions. Rural tourism enterprises usually generate modest levels of income, although in some cases they earn as much revenue as traditional farm activities and enable families to remain on farms that would not otherwise be economically viable. Often profit is not the main reason for rural people to develop a tourism enterprise. Operators in the study emphasised the social benefits and costs of their enterprises as much as they did economic benefits. The greatest effects they reported on their personal and family's lives were (in descending order) greater social contact with visitors, contact with people from other cultures, loss of personal and family time and increased personal and family income (Warren and Taylor, 1999: 19-22).

Accommodation represents about half of all rural tourism operations. For two-thirds of enterprises in this sector it is their primary product, while the other third provide it with other tourism products. Three-quarters of the enterprises provide home-based accommodation (i.e. farmstay, homestay and bed and breakfast). While

there are fewer motels, backpackers, lodges and hotels than home-based enterprises, they provide many more rooms and beds. For half of the accommodation enterprises in the survey the annual gross turnover was \$10,000 or under, which is much less than the \$25,000 median for rural tourism enterprises in general (Warren and Taylor, 1999: 56-57).

Another third of rural tourism enterprises are activity based. They include a broad range of activities from jet-boating and skiing to nature tours and agricultural displays. Two-thirds of enterprises in this category provide activities for tourists as their main product, while for the remaining third it is a secondary product. Nature tours, transport-oriented operations, and fishing are the most common activities provided as a primary product, whereas fishing, hunting and kayaking are the most frequent activities provided as a secondary product. Almost three-quarters of these activity-based enterprises started operating within the previous ten years so they are a relatively new phenomenon compared to other rural tourism enterprises. The median gross annual turnover for the activity sector (\$60,000) is more than double that of the overall median (\$25,000). Enterprises in this sector have higher levels of investment and are more likely to have business plans. Although their long-term loans tend to be smaller, their short-term debt is higher than that incurred by rural tourism enterprises in general (Warren and Taylor, 1999: 59-60).

Retail enterprises are also a significant part of rural tourism. Sixteen per cent of respondents reported that retailing was their primary tourism activity, and another 12 per cent indicated it was a secondary activity. The median gross turnover of retail enterprises (\$60,000) is over twice than of all tourism enterprises (\$25,000). The levels of both their long and short-term debt are higher than for rural tourism businesses in general (Warren and Taylor, 1999: 60-61).

### *Farm based tourism*

Tourism has become an important means for farmers to diversify their income. The number of farm based tourism enterprises in the United Kingdom and Europe grew steadily during the latter half of the 20<sup>th</sup> century, and by 1974 there were some 30,000 of them in England and Wales (Frater, 1982: 8, 25-27).

A conceptual framework to examine both the external and internal environments associated with farm accommodation has been developed by Evans and Ilbery (1989: 258, 261-263). They point out that the declining real farm incomes during the 1980's put great pressure on the rates of return on farm capital. Thus farmers were attracted towards relatively profitable alternative farm enterprises. Farm-based accommodation was particularly attractive, because it was a well established alternative with the potential to generate significant turnover. Farm accommodation is often marketed through farm holiday guidebooks. Some organisations in the tourist industry have set up marketing linkages with regard to farm accommodation, and those organisations established the standards to which the operators have to conform. Several aspects of the internal farm environment that influence the establishment of an accommodation enterprise include the attitudes of the farmer and farm family, the characteristics of the family business, the seasonal demand for labour, the family development cycle, and the gender division of labour.

Evans and Ilbery (1992) used this conceptual framework for a study of over 200 farms in Dorset, Staffordshire (both dominated by livestock and specialising in dairying), and Lincolnshire (arable and horticultural) during 1989. The most frequently expressed motive in the study for establishing an accommodation enterprise was financial. For larger sized farms, the accommodation enterprise was an accumulation strategy to finance an adjustment to business activities, while small farms used it to restructure their business as part of a survival strategy. The most common use of the income generated from accommodation was for raising the living standards of the farm family, and only 12 per cent of households used the additional income to accumulate capital for the farm business. Most of the farm households (88 per cent ) financed their accommodation facilities from internal business resources, while the remainder secured a loan from an external source (Evans and Ilbery, 1992: 88-93).

Farm tourism in New Zealand developed slowly until the late 1970's when the rate of growth increased significantly. The spacial distribution of farm tourism in Canterbury and Westland is closely related to the major tourist routes. While some areas, such as North Canterbury, have the natural resources for the development of farm tourism, their geographic isolation and lack of infrastructure for tourism hinders their development (Armstrong, 1990: 78, 83). There are two main types of farm tourism enterprises in New Zealand: farm stays and farm visits and experiences. The operator of a farm stay accommodates guests in the farm home and provides meals. Guests can observe and sometimes participate in farm activities. There were over 1,000 farms regularly hosting guests in 1988, and this tourist activity is dominated by foreign visitors. Both domestic and international tourists enjoy a variety of farm visits and experiences including day trips to sheep stations and short visits to farms during bus tours (Pearce, 1990: 338).

Armstrong (1992) surveyed 68 farms with tourism businesses in Canterbury and Westland. Most farms in the study had moved into tourism during the 1980's. Two thirds of the farms hosted less than 25 visitors per year, and only eight farms hosted more than a hundred. In over 90 per cent of the farms, tourism was earning less than 10 per cent of the total farm income:

“This reflects the fact that most farms had gone into the business not primarily for financial reasons, but for social ones, with the farm wife, rather than the husband, being the motivating force. ‘We gain as much from having these guests as they get from staying’ said one, with another describing the business as an ‘excellent live geography and social contact lesson for the family’(Armstrong, 1992: 106).”

Three-quarters of the farms provided accommodation in the farm house rather than in separate facilities. Factors such as the size of the farm house, the cost of providing new facilities, and the peak season for tourists occurring during the busiest part of the farming year, limited the ability of the operators to expand the tourism business (*ibid*).

#### *Maori involvement in the tourism industry*

Maori have been involved in the management and operation of the tourism industry in New Zealand since the latter half of the 19<sup>th</sup> century. The birthplace of Maori tourism is at Rotorua where the geysers and famous pink and white terraces attracted overseas visitors who were shown these natural wonders by Maori guides. Nowadays there are several prominent Maori tourism enterprises providing activities for overseas and domestic visitors. For example, Ngati Whare who in partnership with Pakeha operators offer guided walks in the Whirinaki forest; enterprises at Rotorua and Kaikoura that provide four-wheel motor bike tours and whale watching activities; and Tarawera Helicopters which operates scenic flights from Rotorua (Ryan, 1997: 263-264).

Thirty-four of the nearly 500 enterprises participating in the survey conducted by Warren and Taylor (1999) were owned and operated or managed by Maori. Based on this finding Warren and Taylor estimate that Maori owned and/or managed enterprises comprise about seven per cent of those involved in rural tourism activities. Maori enterprises are more likely to be owned by a trust or an incorporated society, but are less likely to be operated together with a farm. Like other operators of rural tourism enterprises, Maori earn income from other sources, particularly paid employment. Furthermore, they are more likely than rural tourism operators in general to have long-term loans, and at least one aspect of a formal business plan (Warren and Taylor, 1999: 48, 50-51).

## **CONCLUSION**

Over the last 25 years the ownership of natural resource dependent industries in New Zealand has become dominated by a relatively few companies. At first glance the agriculture and tourism sectors appear to be



exceptions to this general trend because of the large number of small-scale enterprises operating in them. However, there has also been a concentration of ownership in important activities of both of these sectors such as has occurred in the case of dairy factories and international class hotels.

Several factors have encouraged this concentration of ownership, including the sale and restructuring of state-owned assets; the deregulation of the New Zealand economy; falling commodity prices that have led some companies to reduce their costs of production by vertically integrating their operations; the adoption of more capital-intensive technologies; and the willingness of foreign owned companies to invest in resource industries in New Zealand.

It is noticeable from the review of the six sectors that many of the major companies in the agriculture, fishing and tourism industries remain New Zealand owned. Agriculture has numerous small-scale primary producers whose interests beyond the farm gate are often protected by cooperatives which process commodities such as dairy products and meat for consumers. In the fishing industry, the ownership of quota, vessels and processing facilities is firmly in New Zealand hands. Tourism has a dualistic structure comprising a large number of small enterprises, and a small number of medium to large operators. While the majority of international class hotels and some of the main transport providers (i.e. international airlines and rail) are foreign owned, other major companies operating in the sector remain under local control.

With the scale of New Zealand's natural resource dependent industries being comparatively small by international standards, the major companies in each sector have consolidated and expanded their operations by acquiring or merging with their rivals to maintain their competitive advantage. Meanwhile, many smaller operators have either left their particular industry (e.g. fishing, coal mining), or become more dependent on major companies (e.g. farming, tourism) for their revenue. Furthermore, foreign control of some industries (e.g. energy, forestry) is much more entrenched than it was before the government began selling off state-owned enterprises some 15 years ago. Even in the agricultural sector, where much of the processing of farm produce is undertaken by cooperatives, farmers do not have the same degree of control over these operations that they had when production plants were more geographically dispersed.

This review has provided important insights for the development of survey questionnaires and interview schedules that are to be used to identify changes in the ownership of businesses involved in the production and processing of natural resources. It has also identified a number of factors, such as those influencing new business formation and the intergenerational succession of family businesses, which will become part of the models and scenarios this project is preparing for decision makers and communities to use in regional development programmes.

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