



**TRADE AND AGRICULTURE DIRECTORATE**

**THE ROLE OF AGRICULTURE AND  
FARM HOUSEHOLD DIVERSIFICATION**

**IN THE RURAL ECONOMY OF**

**NEW ZEALAND**

## ***Foreword***

This report reviews information on the role of agriculture and farm household diversification in the rural economy of New Zealand. It was prepared by a consultant, Darryl Jones.

It is one of 13 country reviews prepared under Output area 3.2.1: Agricultural policy reform (Item 3.2) of the programme of work and budget of the Committee for Agriculture for 2007-08.

Based on material compiled from the available literature, these country reviews address all or most of the topics listed below:

- Definitions and underlying concepts of “rural” as they exist at the national level.
- The availability of data pertaining to the share of agriculture and the agro-food sector in the economies of OECD countries at the national level and in rural areas and trends therein.
- The availability of data relating to the income situation of farm households and in particular the availability of information related to non-farming activities.
- The extent to which non-farming income-earning activities of farm households are farm based (*i.e.* using farm resources as in the case of farm tourism) or rural based (located in rural areas).
- The extent to which the industries upstream and downstream from primary agriculture are located in rural areas.
- The strength of multiplier effects between farm/farm based and up/downstream industries and rural economies.

The information in these country reviews was used as background to the report "The role of agriculture and farm household diversification in the rural economy: evidence and initial policy implications" [TAD/CA/APM/WP(2009)1/FINAL], which was declassified by the Working Party on Agricultural Policies and Markets in February 2009.

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## EXECUTIVE SUMMARY

Rural areas are defined in national statistics on the basis of population. The standard classification makes a distinction between “rural centres” (those with a population of 300-999) and “other rural” which is the residual category, *i.e.* the population not living in urban areas (those with a population of over 1 000) or rural centres. An alternative urban/rural classification system based on workplace address has been developed to re-classify the population living in rural centres and other rural into four different categories: rural areas with high urban influence, rural areas with moderate urban influence, rural areas with low urban influence and highly rural/remote areas.

Rural areas account for 97% of total land area, and around 14-15% of population, employment and GDP. The most rural regions are Northland, Gisborne, Southland and the West Coast, while Auckland and Wellington are the most urban regions.

Land used for agricultural production accounted for 43% of the total land area in 2005, down almost 20% from 1985. It accounts for 50% or more of land area in the Hawke’s Bay, Otago, Canterbury and the Manawatu-Wanganui regions. Since 1985, land used for plantation forestry has increased from 4% to 6% of total land area, and accounts for over 15% of land area in Bay of Plenty, Gisborne and Marlborough.

It is estimated that about one-third of the rural population was living on farms in 2006, down from one-half in 1986. While the farm household population has fallen by around 20% over the twenty years, the proportion of the total population defined as rural has remained fairly stable at around 14% over the same period. Between 1986 and 2006, the number of people defined as rural increased by 17%: all this increase has occurred in regions defined as having high or moderate urban influence.

Almost one-third of those living in rural areas define themselves as working in either the agriculture, fishing and forestry sectors. These sectors employ over 50% of workers in highly rural/remote areas but only 8% of the total workforce, with the agro-food industries (up and down stream) employing a further 5%. Employment in agricultural production has fallen by around 20% since the mid-1980s.

Agriculture’s share of total GDP has remained fairly stable at between 5-6% since the mid-1980s due to significant increases in productivity. If Auckland and Wellington are excluded, agricultural production accounts for 10% of GDP and is the largest industry in Gisborne and Southland (representing 15% and 19% of regional GDP respectively). The contribution of the food, beverage and tobacco manufacturing sector to total GDP has also remained relatively constant in the range of 5-6% of GDP over the past twenty years.

Non-agricultural income earning activities (whether from an on-farm, non-agricultural enterprise or off-farm employment) takes place on 30-50% of New Zealand farms; are more likely to be undertaken by women; with its importance in household income varying from year to year depending on commodity prices, *e.g.* very important at the moment for deer farmers.

The diversification into non-agricultural activities is motivated in part by a desire to secure an alternative income source. It also reflects some general work/lifestyle developments, a desire to interact

with others and an expression of an entrepreneurial spirit. Policies have played a role, primarily through the impact of subsidy reform, along with facilitation, and some financial incentives for forestry conversion.

Farm tourism has expanded since the mid-1980s, for example, with the number of farms providing accommodation more than doubling. Tourism services provided by farmers include accommodation (usually in the host's home), day visits to the farm (for education and recreational purposes), experiences relating to agriculture (*e.g.* sheep shearing and dogs working) and non-agricultural activities such as trekking and nature watching. While the financial benefit is important, particularly in years when returns from agriculture are low, the social benefit to the hosts of meeting visitors is seen as the most important motivation.

In terms of value added multipliers, it is tentatively concluded that agricultural production in general, ranks lower than agro-food industries, industries associated with tourism and public services. Within agriculture, dairy and horticulture rank higher than sheep and beef farming.

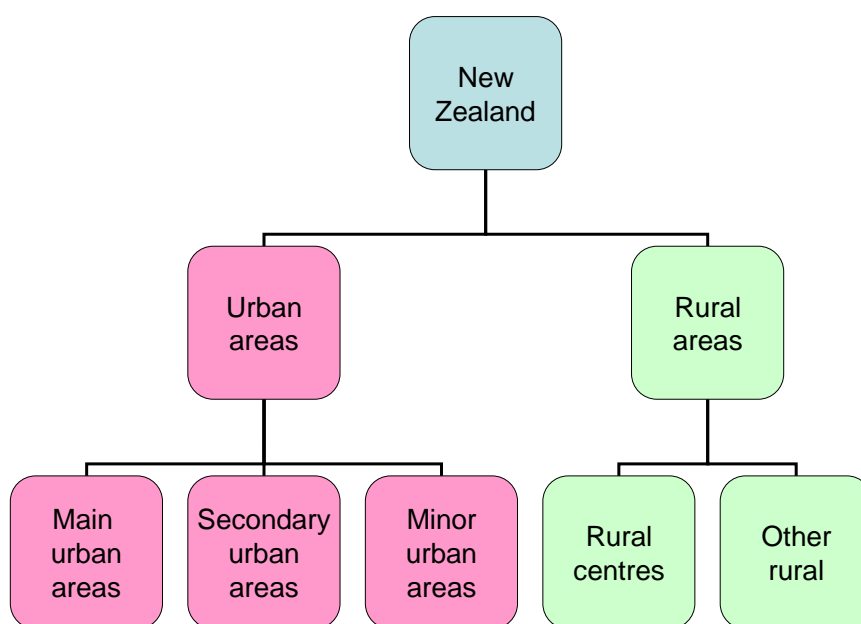
## THE ROLE OF AGRICULTURE AND FARM HOUSEHOLD DIVERSIFICATION IN THE RURAL ECONOMY OF NEW ZEALAND

### Definition of rural areas in national statistics

#### *The standard urban/rural classification*

The standard New Zealand classification of urban and rural areas uses population size to delineate urban and rural areas (SNZ, 1997). Urban areas are defined as settlements of 1 000 people or more. Urban areas range from main urban areas (populations of 30 000 or more), secondary urban areas (populations of 10 000 to 29 000) and minor urban areas (populations between 1 000 and 9 999) (Figure 1).

Figure 1. Standard urban/rural classification system



Source: SNZ (2006a).

The standard urban/rural classification has two categories of rural areas: rural centres and other rural. “Rural centres” are defined by population size, having a population of 300 to 999 in a reasonably compact area that services surrounding rural areas (district territory). They have a defined statistical boundary (an area unit) but no legal status. “Other rural” is the urban/rural area classification residual category and includes all area units not in urban areas or rural centres. This category includes inlets, islands, inland waters, and oceanic waters outside urban areas.

Policy analysts and demographers have found the rural classification and the delineation of minor and secondary urban areas simply by population size to be of limited value. One of the problems identified with the standard classification is that it does not acknowledge the variety of rural areas. Lifestyle areas close to cities may be classified as rural, but are very different from farming communities in the rugged and remote back country. In the former, the urban area provides a significant focus for the community which has ready access to recreational, economic or health services. By contrast, the latter tend to be further from urban centres, particularly main urban centres, and have poorer access to services. (Goodyear, 2005)

Similarly, population size alone cannot adequately describe the characteristics of different urban areas. A minor urban area such as Rolleston, which is close to Christchurch, has different structures and needs to Westport, located far from a large urban area. Yet both centres have similar-sized populations and are classified as minor urban areas.

### ***An alternative urban/rural classification***

In response to these problems, Statistics New Zealand (SNZ) developed an alternative urban/rural classification system that more accurately depicts the different characteristics of areas (SNZ, 2006a). (Figure 2) After considering other variables such as population density<sup>1</sup> and a single variable indicator of remoteness (such as distance from a hospital), SNZ developed a classification system which uses workplace address compared to address of usual residence as a means of measuring “rurality”. Workplace address provides a useful means of exploring the links between places with employment, standing as a proxy for a number of other variables, such as economic and social links between places. It allows rural areas to be defined by their relationship to urban areas, giving a picture of the degree of urban influence on a rural area, and allows for the adoption of the concept of remoteness for defining rural populations. (Goodyear, 2005)

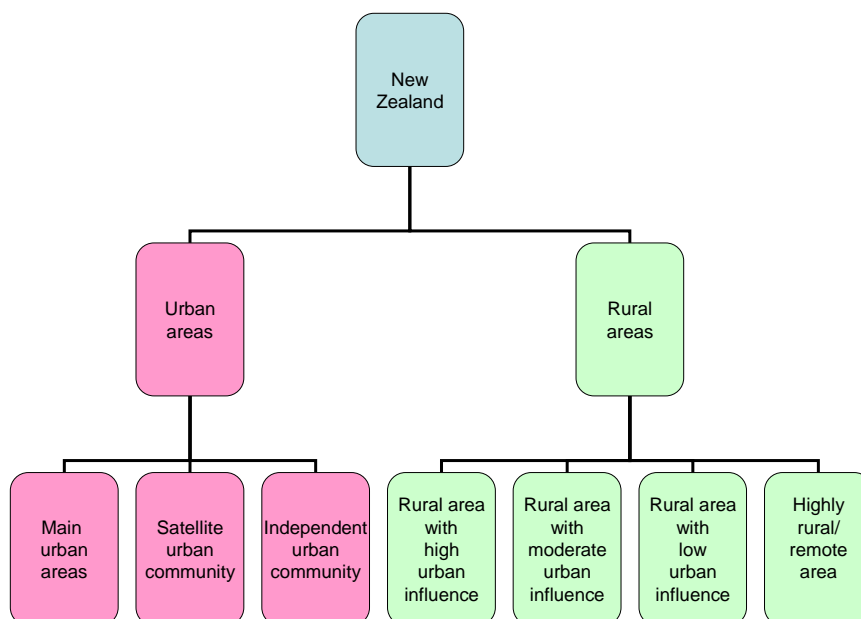
The alternative classification system follows the existing SNZ urban and rural boundaries at the broad level, *i.e.* areas with a population over 1 000 are classified as urban: the remainder as rural (Table 1). Main urban areas remain the same, but minor and secondary urban areas are reclassified into either satellite or independent urban communities. Rural areas, instead of being treated as the residual category of urban areas, are separately classified into four new categories according to the varying influence of nearby urban areas. This classification enables more extensive analysis and reporting, particularly between various types of rural areas, and better reflects the areas’ heterogeneity (SNZ, 2006a).

The threshold to determine whether an urban area was satellite or independent was set empirically at 20% of the employed population working in a main urban area. This threshold was set at 20% after a series of investigations involving Geographic Information System (GIS) because it emerged as the most relevant threshold (Goodyear, 2005).

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1. Classifying urban/rural areas based on population density made very little difference when defining the population although it did change the appearance of urban boundaries. Urban boundaries include areas of unpopulated land close to cities that may be used for future urban expansion.

**Figure 2. Alternative urban/rural classification system**



Source: Goodyear (2005) and SNZ (2006a).

**Table 1. Description of categories in the alternative urban/rural classification system**

Category	Description
Main urban area	Main urban areas are very large and centred on a city or main urban centre. They have a minimum population of 30 000 (Whangarei, Auckland, Hamilton, Tauranga, Rotorua, Gisborne, Napier-Hastings, New Plymouth, Wanganui, Palmerston North, Kapiti, Wellington, Nelson, Christchurch, Dunedin and Invercargill).
Satellite urban community	This category identifies towns and settlements with strong links to main urban centres. Satellite urban communities are defined as urban areas (other than main urban areas) where 20% or more of the usually resident employed population's workplace address is in a main urban area.
Independent urban community	This category identifies towns and settlements without significant dependence on main urban centres. Independent urban communities are urban areas (other than main urban areas) where less than 20% of the usually resident employed population's workplace address is in a main urban area.
Rural area with high urban influence	This category identifies rural areas that form a transition between the main urban areas and rural areas, although meshblocks <sup>1</sup> are not necessarily contiguous with main urban centres. The index allows for a meshblock to be included in this category only if a significant proportion of the resident employed population work in a main urban area.
Rural area with moderate urban influence	This category identifies rural areas with a significant, but not exclusively, main urban area influence. A meshblock <sup>1</sup> can be included in this category: (1) if a large percentage of the resident employed population works in a minor or secondary urban area, or (2) if a significant percentage work in a main urban area. However, if the percentage working in a main urban area is too substantial, the meshblock will be included in the high urban influence category.
Rural area with low urban influence	This category identifies rural areas with a strong rural focus. The majority of the population in these areas works in a rural area. Due to the impact of the weighting system, it is unlikely meshblocks <sup>1</sup> in this category will have many people employed in a main urban area, although a number may work in a minor urban area.
Highly rural/remote area	These are rural areas where there is minimal dependence on urban areas in terms of employment, or where there is a very small employed population.

1. The meshblock is the smallest geographic unit for which statistical data is collected and processed by Statistics New Zealand..

Source: SNZ (2006a).

Meshblocks<sup>2</sup> in rural areas are allocated to one of four categories, based on a weighted percentage of resident employed adults who work in the three standard categories of urban area (for simplicity the methodology uses main, secondary and minor urban area). The percentages working in each urban area were weighted through the use of multipliers (Annex Table 1 provides selected examples of how this is constructed). The multipliers allowed for the increasing urbanisation of different sized urban areas. For example, the percentage of rural people working in a main urban area had double the impact of the same percentage working in a minor urban area. This weighting acknowledges the impact that a large urban centre has on its surrounding area. It is also consistent with other methodology, such as the Ministry of Education’s isolation index. The weighting ensures that, for example, rural areas surrounding the secondary urban area of Gore are acknowledged as being very different from rural areas outside the main urban area of Christchurch (the latter would be included in the category rural area with high urban influence).

For example, Rolleston is an urban community with just under 2 000 people (at the time of the 2001 Census), within about 20 minute’s drive of Christchurch, a city of over 300 000 people. Geraldine is a small urban community of 2 205 people over an hour’s drive from Christchurch (Figure 3). Both these communities would have been listed as minor urban areas, but under the alternative urban/rural classification Rolleston becomes a satellite urban area and Geraldine is considered an independent community. More than two-thirds of the employed population of Rolleston worked in Christchurch City at the time of the 2001 Census. In contrast, just over 10% of Geraldine’s population worked in Timaru and less than 1% worked in Christchurch City. Annex Figures 1 and 2 show the urban/rural profiles of the North and South Islands of New Zealand.

**Figure 3. Example of urban/rural areas in the Canterbury region**



Source: Goodyear (2005) and SNZ (2006a).

2. The meshblock is the smallest geographic unit for which statistical data is collected and processed by Statistics New Zealand. A meshblock is a defined geographic area, varying in size from part of a city block to large areas of rural land. Each meshblock abuts against another to form a network covering all of New Zealand, including coasts and inlets, and extending out to the 200-mile economic zone. Meshblocks are added together to ‘build up’ larger geographic areas such as area units and urban areas. They are also the principal unit used to draw up and define electoral district and local authority boundaries.

## Rural areas in the national and regional economy

### *National economy*

Rural areas account for 97% of total land in New Zealand and around 15% of population, employment and GDP (Table 2). The vast majority of the population is concentrated in urban areas, which occupy less than 3% of New Zealand's land area. Highly rural and remote areas, in contrast, comprised just 2% of the usually resident population, but over half of New Zealand's land area.

**Table 2. Share of rural in total land, population, employment and GDP, 2001**

	Land	Population	Employment	GDP
New Zealand (million)	27.035 hectares	3.737 persons	1.727 persons	115,941 2003\$
Total Rural	97.2	14.2	15.4	13-15 <sup>1</sup>
Highly rural/remote areas	53.1	2.0	2.2	
Rural areas with low urban influence	33.3	6.0	6.4	
Rural areas with moderate influence	8.0	3.6	3.9	
Rural areas with high urban influence	2.8	2.6	2.9	
Total Urban	2.7	85.8	84.6	85-87
Independent urban communities	0.6	11.7	10.9	
Satellite urban communities	0.2	3.0	2.7	
Main urban areas	1.9	71.1	71.0	

1. Personal calculation derived from regional GDP values and rural employment shares.

Source: SNZ (2006a) based on Census of Population and Dwellings 2001.

Results from the 2006 Census indicate that 86% of the population lived in urban areas. Based on the standard urban/rural classification system, 72% lived in main urban areas, 6% lived in secondary urban areas and 8% lived in minor urban areas. There are marked ethnic differences in urbanisation, with the vast majority of Pacific peoples, Asian and other ethnic groups living in main urban areas and very few in rural areas. For both European and Māori, 84% were living in urban areas and 16% in rural areas (MSD, 2007).

### *Rural economy*

There are also some important regional differences in terms of the share of rural land and people (Table 3).<sup>3</sup> With the exception of Auckland, over 93% of land is classified as rural within each of the other fifteen regions.<sup>4</sup> Variation is much more noticeable in terms of people. Rural areas account for only 4% of the population and employment in Auckland and Wellington but for over 40% in Northland and the West Coast, and between 20-30% in most other regions. If Auckland and Wellington regions are excluded, just over 20% of the remaining New Zealand population live in rural areas.

3. The top tier of local government is called a *region* and there are 16 regions in New Zealand. Of these 16 regions, 12 are governed by regional councils, while four are governed by the second tier of local government, *territorial or local authorities* (territorial authorities which perform both roles are known as *unitary authorities*). In total there are 86 local authorities in New Zealand.

4. Annex Figure 3 shows the geographic boundaries of the sixteen regions while Annex Table 2 shows their relative importance in terms of land, population, employment and GDP.

**Table 3. Share of total rural in land, population and employment by region, 2001**

	Land	Population	Employment
New Zealand	97.2	14.2	15.4
Total North Island	94.9	12.7	13.4
Northland	95.8	48.6	49.9
Auckland	73.7	4.1	4.5
Waikato	93.4	23.8	26.1
Bay of Plenty	95.7	19.7	21.0
Gisborne	98.4	27.9	29.1
Hawke's Bay	98.1	13.3	15.2
Taranaki	96.4	23.2	27.3
Manawatu-Wanganui	97.6	19.3	22.6
Wellington	93.5	3.6	4.0
Total South Island	98.8	18.9	21.1
Tasman and Nelson <sup>1, 2</sup>	100.0	22.0	23.6
Marlborough <sup>2</sup>	100.0	22.6	24.7
West Coast <sup>2</sup>	100.0	41.3	43.0
Canterbury	98.8	14.4	16.4
Otago	98.3	19.3	21.4
Southland <sup>2</sup>	100.0	29.9	34.4

1. The Tasman and Nelson regions are combined for purposes of GDP estimation and so are also combined in terms of land, population and employment in order to make the data comparable.

2. Urban land area represents less than 0.1% of total land area for these regions.

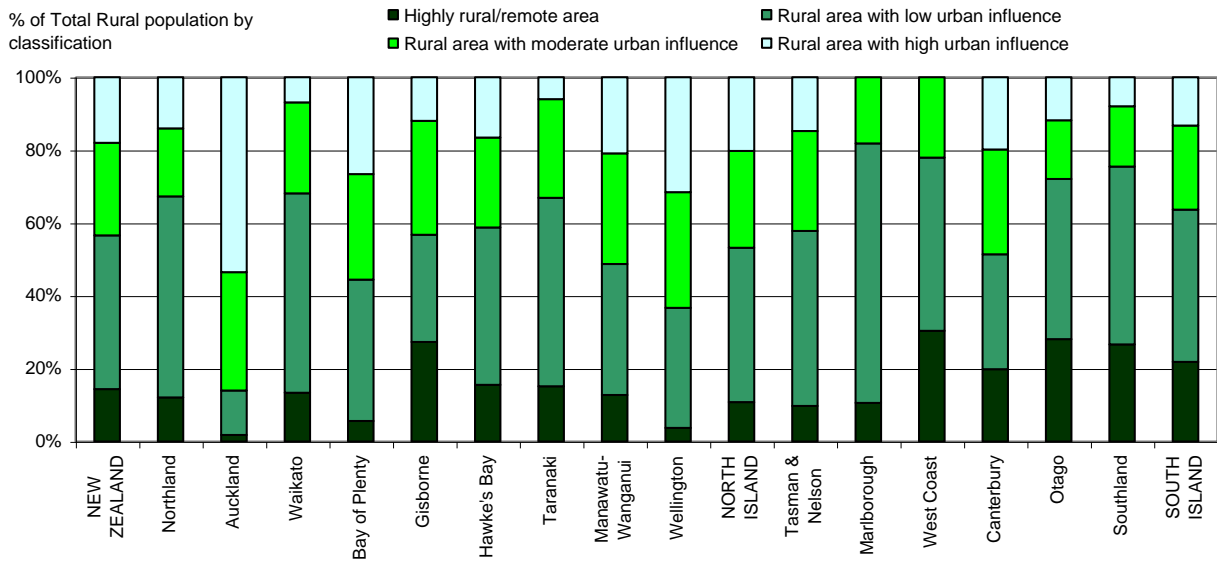
Source: SNZ (2006a) based on Census of Population and Dwellings 2001.

There are also significant variations within the total rural population of each region in terms of the proportion of the population living in each of the alternative urban/rural classifications described in section 1.2. In the West Coast, Otago, Gisborne and Southland around 30% of the rural population live in highly rural/remote areas compared to the national average of 14% (Figure 3). In the North Island regions of Northland, Waikato and Taranaki, and the upper South Island regions of Tasman and Nelson and Marlborough, more than 50% of the rural population is classified as living in rural areas with low urban influence.

It is possible to combine the information in Table 3 and Figure 3 to classify each of the regions according to the extent of their “rurality” (Figure 4). The horizontal axis shows the share of the regional population classified as rural. The vertical axis shows the share of the rural population that live in areas defined as being either highly rural/remote or with little urban influence, *i.e.* the further up the axis the less important urban areas are for employment of the rural population.

On the basis of this system, New Zealand regions can be classified into three broad categories. Gisborne, Northland, Southland and West Coast are the most rural of the sixteen regions, with more than 25% of the population living in rural areas and more than 40% of these living in the most rural areas. Auckland and Wellington are the least rural, having a very small share of the population defined as rural and more than 60% of these living in areas with high or moderate urban influence. In all the other regions, less than 25% of the population is defined as rural, but more than 40% live in the two areas that are most rural.

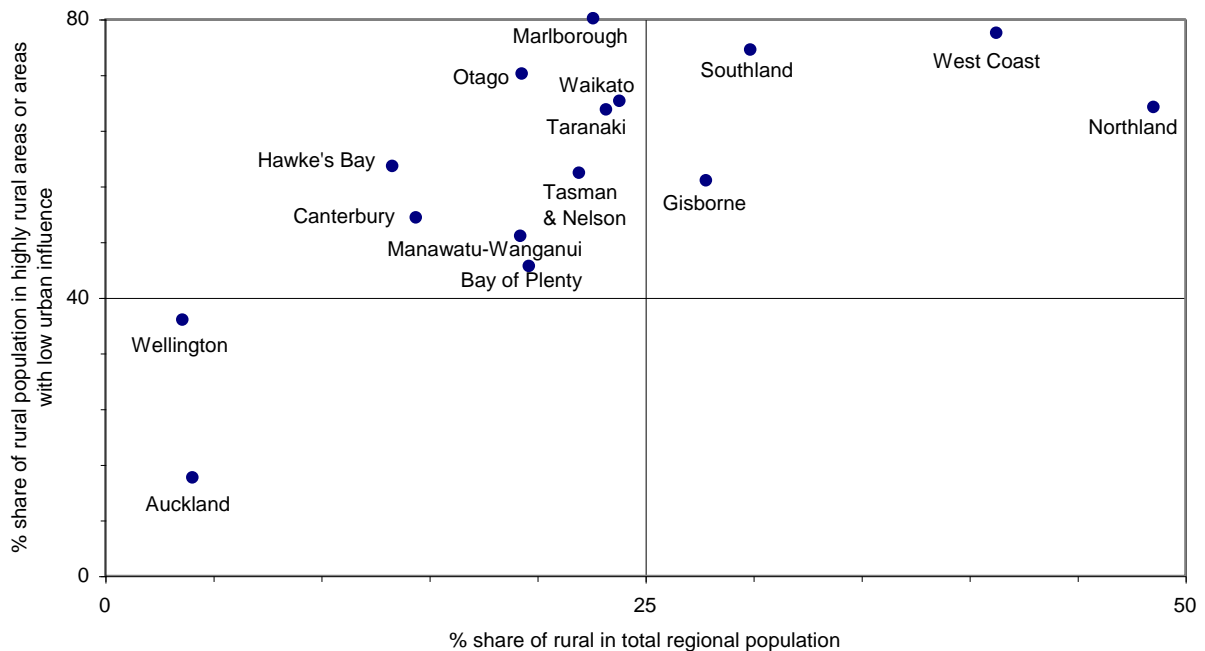
**Figure 3. Share of rural classification by region, 2001**



1. Tasman and Nelson regions are combined for purposes of GDP estimation so are combined also in terms of land, population and employment.

Source: SNZ (2006a) based on Census of Population and Dwellings 2001.

**Figure 4. Identification of rural and urban regions, 2001**



Source: SNZ (2006a) based on Census of Population and Dwellings 2001.

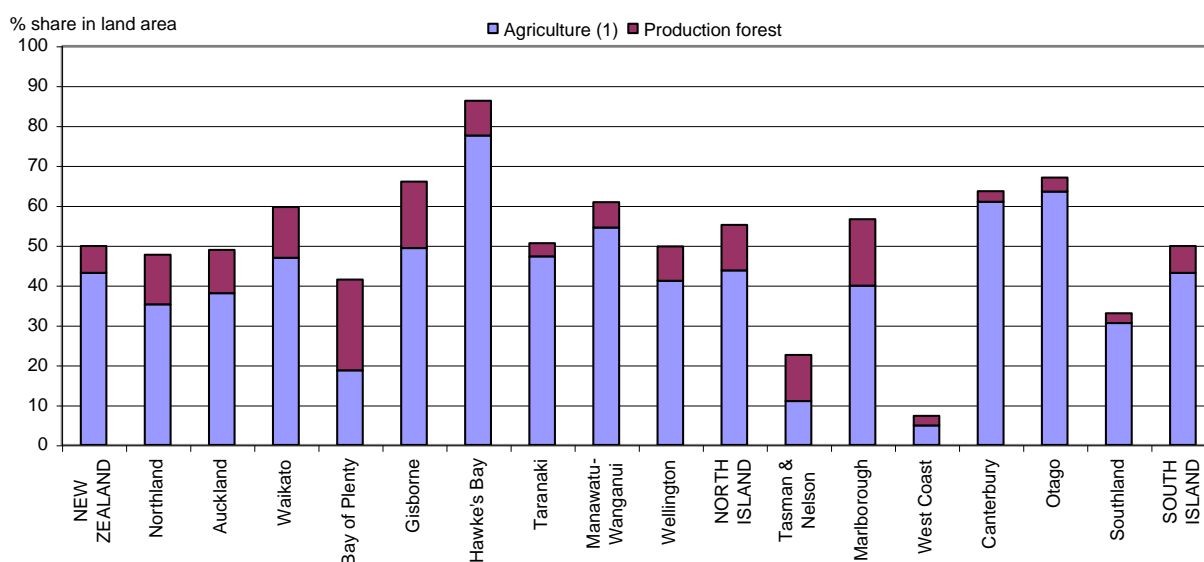
## Role of agriculture and agro-food industries in rural areas

### Land use

In 2003, 43% of the total New Zealand land area was used for agricultural production, including tussock land for grazing, grassland, arable land and land used for horticulture. A further 7% was in planted production forest (90% in *pinus radiata*). The Department of Conservation administers an additional 30% of the total land area in protected areas, including national parks, reserves and conservation areas.

Agricultural land accounts for 50% or more of land area in the Hawke's Bay, Otago, Canterbury and the Manawatu-Wanganui regions (Figure 5). Plantation forestry accounts for over 15% of land area in Bay of Plenty, Gisborne and Marlborough. The smaller share of land used for agricultural or forestry production in West Coast, Tasman and Nelson, and Southland reflects a larger proportion of conservation protected areas within these regions.

Figure 5. Share of agriculture and forestry in land use by regions, 2003



1. Includes tussock land used for grazing, grassland, arable land and land used for horticulture.

Source: Statistics New Zealand.

Since the mid-1980s, the land area used for agricultural production has steadily declined (Table 4). The area associated with livestock and arable farming has declined from 14.4 million hectares in 1983-85 to around 11.7 million hectares in 2003-05. A small amount of this land has gone into horticultural production, which has increased in land area by around 40% over the period although it still only comprises 1% of agricultural land area. Between 1983 and 2005, 2.9 million hectares (which in 1983 represented 20% of agricultural land area and 10% of the total land area of New Zealand) has gone out of agricultural production, an annual decrease of almost 1%.

Approximately one-third of this land has been diverted into plantation forest production, which has increased on average by 35 000 hectares per year between 1983 and 2005. Planting rates reached record levels in the mid-1990s but new plantings have slowed significantly over the last few years with some land being diverted back to agricultural production, specifically dairying.

**Table 4. Area in agriculture and forestry production, 1983-2005**

(000 hectares)

Year	Tussock land used for grazing, grassland and arable land	Land in horticulture	Production forest
1983	14 495	95	1 001
1984	14 386	87	1 041
1985	14 306	87	1 097
1993	13 945	95	1 396
1994	13 536	104	1 488
1995	13 520	124	1 599
2003	11 738	120	1 829
2004	11 760	131	1 786
2005	11 594	119	1 713

Source: Statistics New Zealand.

### Population

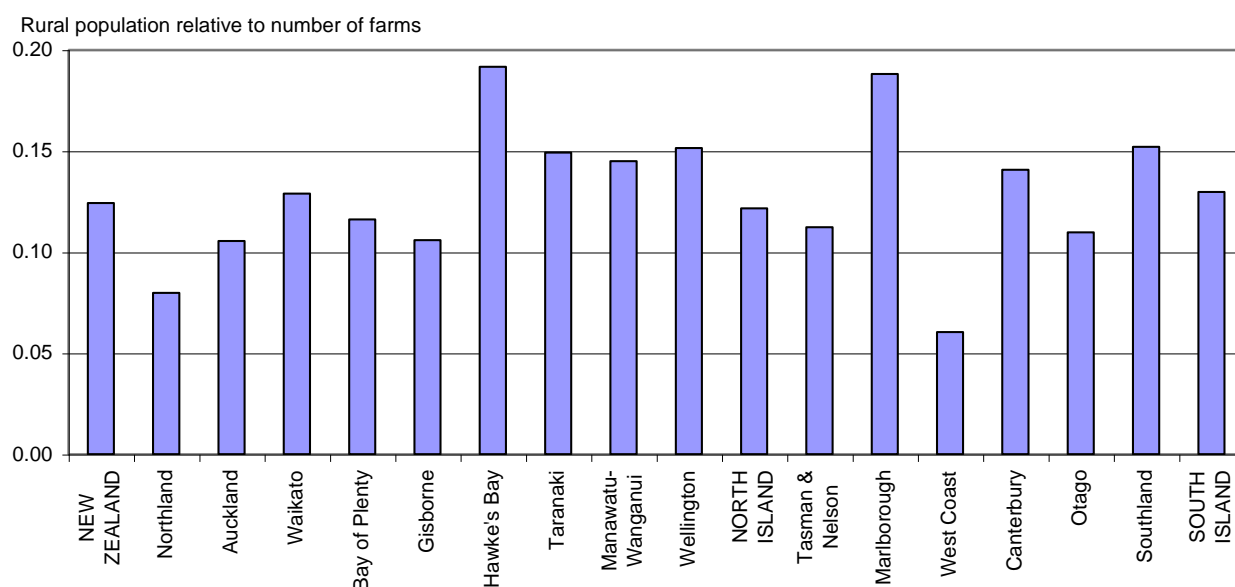
Data regarding the family farm population is not available. However, estimates regarding the number of farms are made. In 2006 there were approximately 65 000 farms in New Zealand, down from just under 80 000 in 1986.

The decrease in the number of farms reflects a general increase in farm size through amalgamation, although it masks the fragmentation of pastoral land that has occurred in some parts of the country (*e.g.* Otago, Marlborough and Gisborne) into other uses such as wine and horticulture. The average dairy farm has increased in size from 65 hectares with 151 cows in 1988 to 118 hectares with 322 cows in 2006. The average North Island sheep and beef farm, often managed by one family with some seasonal or contract work, is now 4 381 stock units on 447 hectares compared to 3 736 stock units on 346 hectares in 1988 (Sherwin, 2007).

Assuming that the average farm household comprises three members, family farm households would represent approximately one-third of the total rural population of 564 000 persons in 2006 (approximately 5% of total New Zealand population). Assuming the same number of persons per farm household in 1986, the farm population would have represented one-half of the rural population (approximately 7% of the total New Zealand population).

The relative importance of farm households in rural populations can be indicated by dividing the number of farms per region by the rural population of the region (Figure 6). Farm households are an important part of the rural population in Hawke's Bay and Marlborough. Comparing this information with Figure 6 provides some interesting results. For example, while Northland and the West Coast have the largest share of regional population classified as rural, farm households are relatively less important in these two regions. Alternatively, while the rural population is relatively small in the Wellington region, farm households appear to be relatively important.

**Figure 6. Relative importance of farm households in rural population by region, 2001**



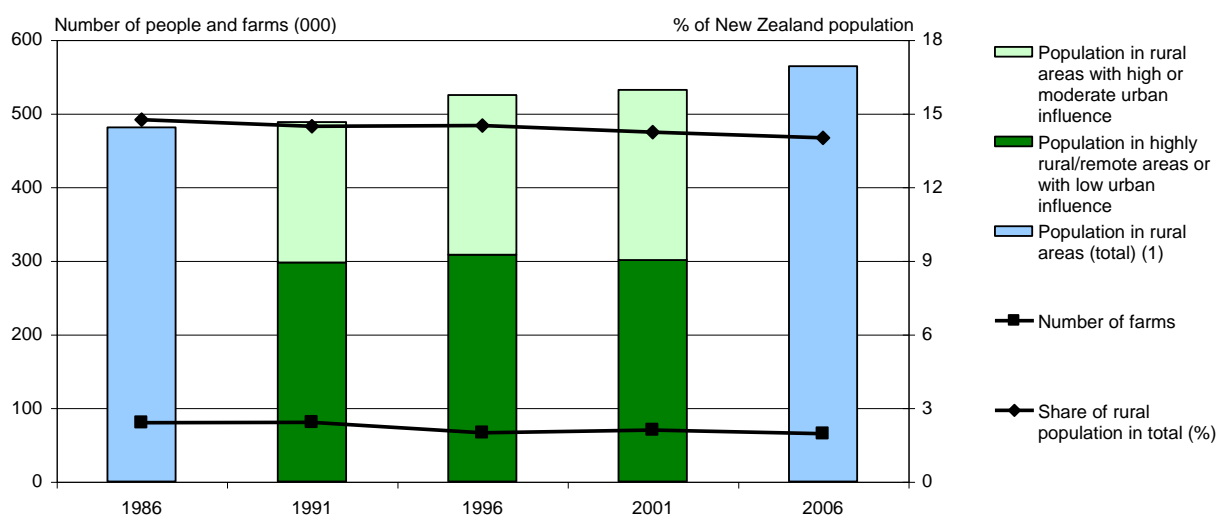
Source: Statistics New Zealand.

While the farm household population has fallen, the proportion of the New Zealand population defined as rural has remained fairly stable at around 14% over the last twenty years (Figure 7).<sup>5</sup> Between 1986 and 2006, the rural population increased by 17%.<sup>6</sup> This increase has occurred in rural areas defined as having a high or moderate urban influence, with the number of people in highly rural/remote areas and rural areas with low urban influence remaining fairly stable at around 300 000.

Pool *et al.* (2005) notes three trends behind this increase in rural population, noting that “the “rural” population of 2001 is very different from that of 1976. There has been overspill from metropolitan and large urban areas, manifesting itself in so-called “4-hectare life-style blocks”<sup>7</sup>, and also movement into “dormitory” towns outside the metropolitan and large urban areas but relatively close (*e.g.* Morrinsville). Secondly, there has been sunbelt migration often to rural areas such as the Coromandel Peninsula and around Kerikeri, as well as urban areas such as Tauranga, and the north of the South Island and the South Island lake region. Another manifestation of this has been the growth of retirement populations in extra-urban locations, especially on the northern flanks of both Auckland and Wellington. A third aspect of “ruralisation” has been the movement of discouraged workers, mainly Māori to rural communities.”

5. “One of the more interesting features of New Zealand’s development is that it was a country that urbanised very early despite its reliance on primary production. The proportion in rural areas was already only 32% in 1951. Between then and 1976 the final major changes in rural production technologies, both for farming and processing industries, occurred and as a result there were rural-urban movements particularly of Māori. Thus by 1976 the proportion in rural areas had dropped to 17%, and declined further to 14% in 2001.” (Pool *et al.*, 2005).
6. Between 1976 and 1981 the rural population decreased by 9.9% but increased by 4.6% between 1981 and 1986. (SNZ, 2006a) In 1916, there were 501 258 people in rural areas (excluding Māori); in 2001, there were 532 740 people in rural areas (including Māori) (Goodyear, 2005).
7. It is estimated that there are between 90 000 and 110 000 lifestyle farm units in New Zealand (Goodyear, 2005).

**Figure 7. Change in rural population and farm numbers, 1986-2006**



1. A breakdown of the total rural population into the various rural categories is not available for these two years.

Source: Statistics New Zealand.

These developments have had some benefits, with an influx of population that has helped to revitalise some rural areas. For example, it has secured the future of some rural schools threatened with closure. An article on Swannanoa school in Canterbury stated: “Rural schools in the Christchurch hinterland were under threat ten years ago because of falling rolls. Today, with city people moving onto lifestyle blocks, rolls are booming.” (Goodyear, 2005).

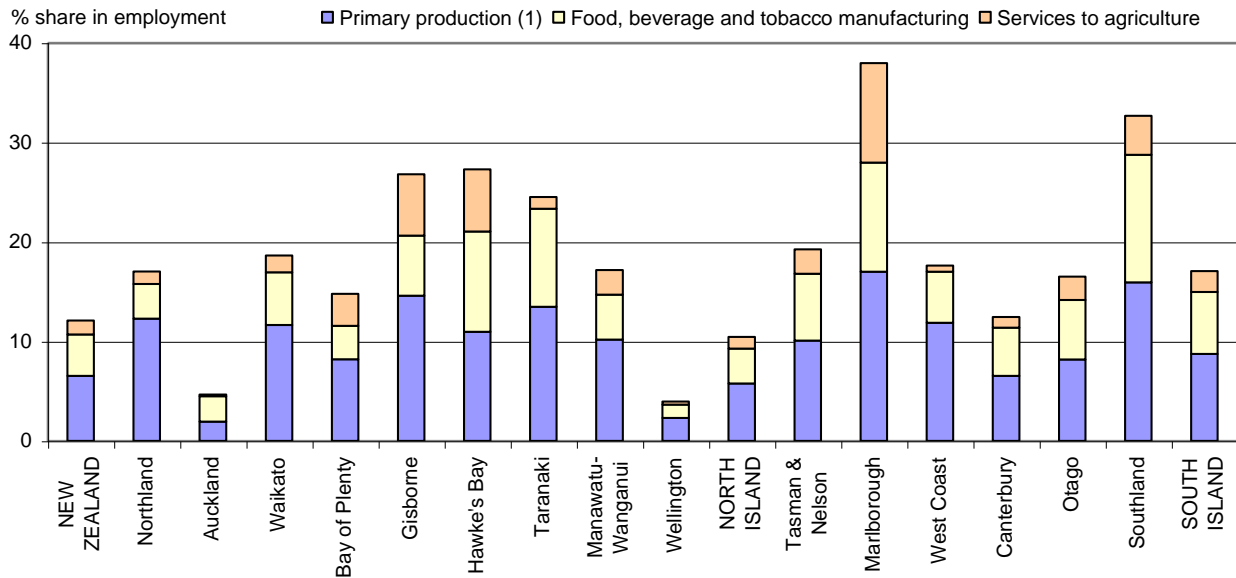
Yet the development of peri-urban areas has also led to conflict. For example, a submission by Federated Farmers stated that “the subsidisation of roads by rates on farm land can support a move to lifestyle blocks by the urban workforce who do not pay the true cost of their commute”. A survey of road users revealed that people in rural areas with high urban influence covered the most kilometres as private drivers, averaging 15 093 kilometres from June 1997 to July 1998, compared with a national average of 9 455 kilometres (Goodyear, 2005).

### Employment

At the national level, a total of 130 000 persons indicated that they were employed in the agricultural, forestry or fisheries sectors in 2006, representing 6.5% of total employment. Approximately 85% of these persons, or just over 5% of the total employment, are employed on the farm. At the regional level, these three sectors accounted for more than 15% of employment in Marlborough and Southland, and for more than 10% of employment in all other regions except Auckland, Bay of Plenty, Wellington, Canterbury and Otago (Figure 8).

Agricultural related industries beyond the farm gate represent a further 5% of total employment. Just over 73 500 persons are employed in food, beverage and tobacco manufacturing nationally. This is a significant employer in the Hawke’s Bay, Taranaki, Marlborough and Southland regions, although 20% of the persons employed in this industry are located in the Auckland region. Services to agriculture employ just under 25 000 persons, representing 1% of total employment, and ranging from 0.2% of regional employment in Auckland to over 5% in Gisborne, Hawke’s Bay and Marlborough.

**Figure 8. Share of primary sector, food processing and services to agriculture in employment by region, 2006**

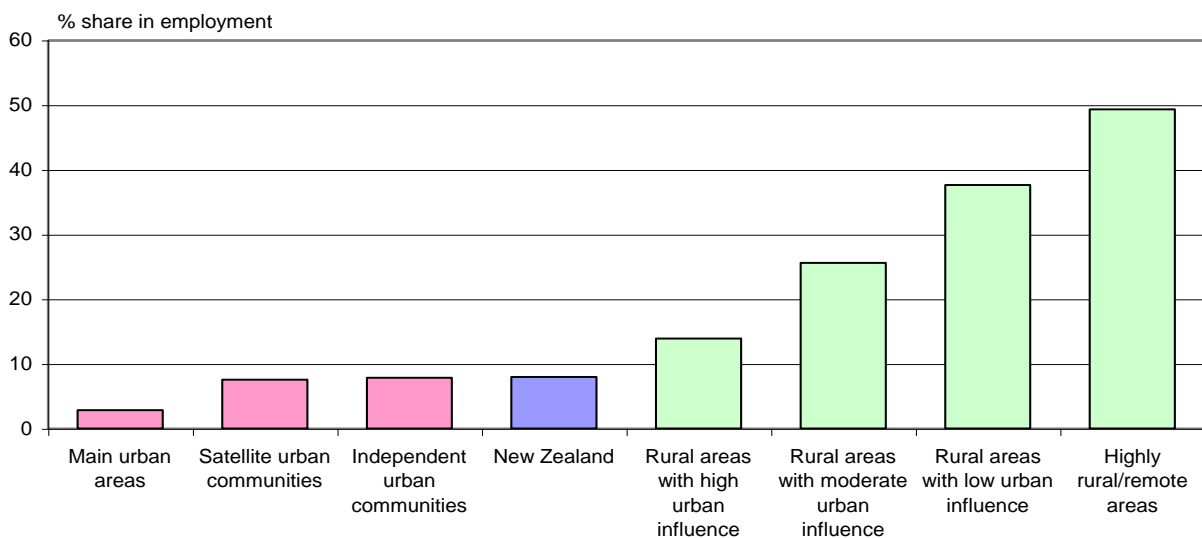


1. Primary production includes agriculture, forestry and fisheries.

Source: Statistics New Zealand.

In highly rural and remote areas, over half of the employed population worked in the agriculture, forestry or fishery sectors (Figure 9). In three of the four rural profile areas, this category was the major occupation group, employing in total around one-third of persons living in rural areas.

**Figure 9. Share of primary sector in employment by urban/rural profile, 2001**



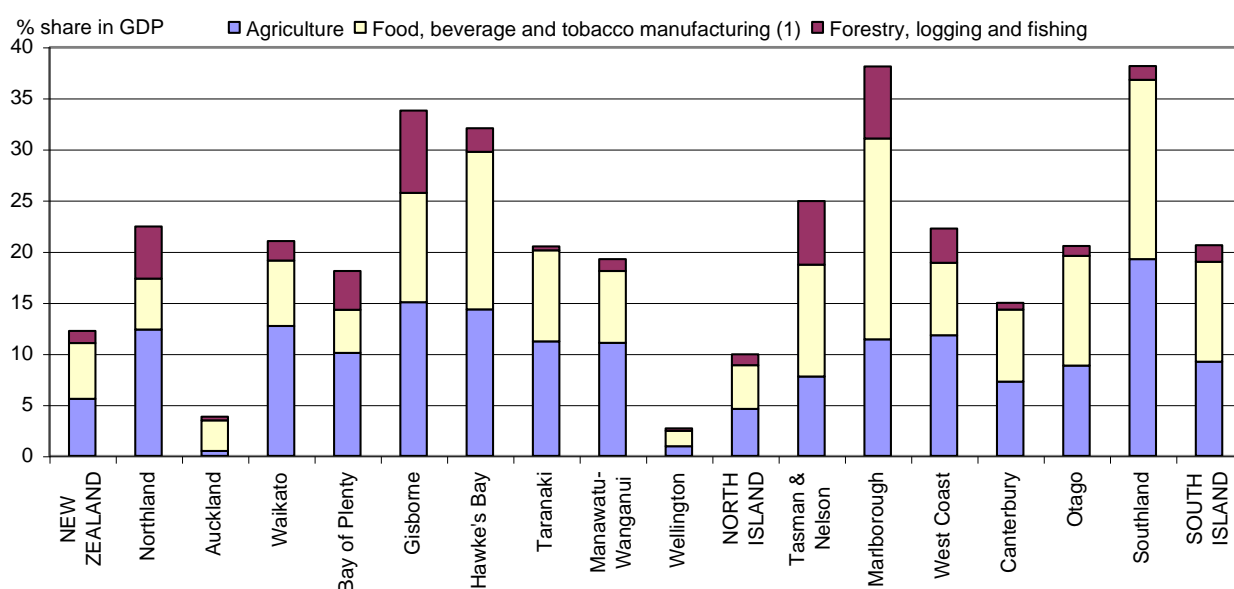
Source: SNZ (2006a).

MAF estimates that in 2004-05 there were just over 100 000 full time equivalents employed in agricultural production at the farm gate, consisting of full time, part time employers and employees and unpaid relatives assisting. The agricultural labour force peaked in 1982-83 at 127 000 full time equivalents (MAF, 2006a). One of the major changes in employment patterns in rural areas has been the rise in the use of contract labour on farms, replacing in many instances the employment of permanent part-time workers.

### Gross Domestic Product

At the national level, agriculture accounts for 5-6% of GDP, depending on international commodity prices and climatic conditions. However, it is much more significant than this for all sixteen regions except Auckland and Wellington (Figure 10). Outside these two regions, agriculture accounts for 10% of GDP. Agriculture is the largest industry in Gisborne and Southland (representing 15% and 19% of regional GDP respectively), and is the second or third largest industry for eight other regions.

**Figure 10. Share of agriculture and agro-food industries in GDP by regions, 2003**

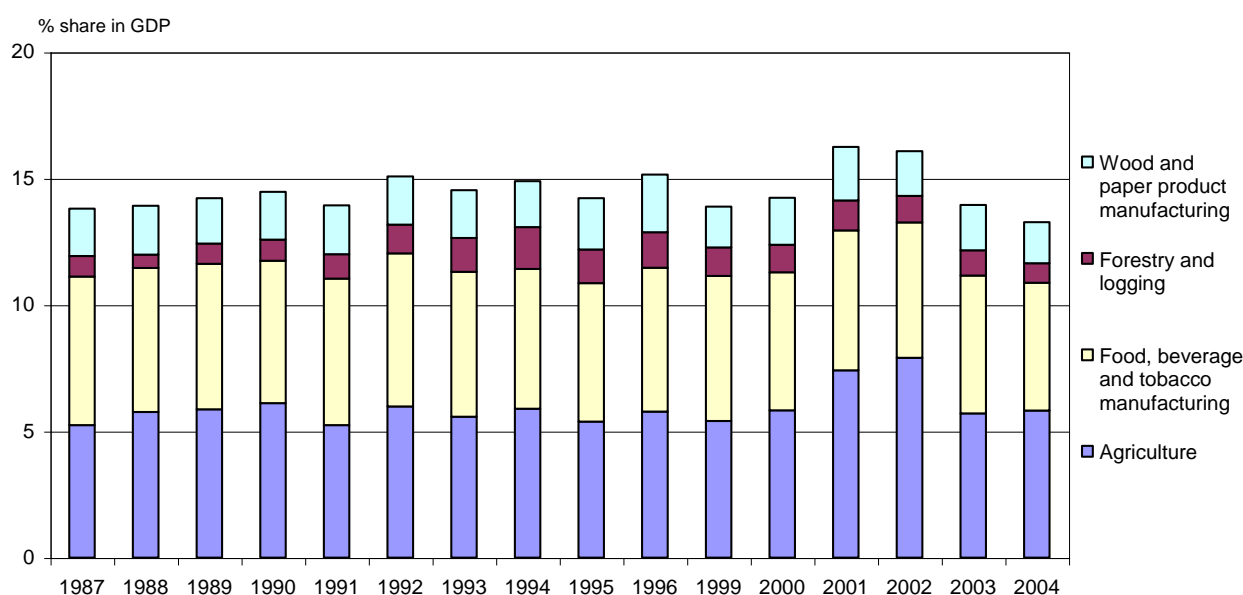


1. Estimate based on the regional distribution of employment in the food, beverage and tobacco manufacturing.

Source: Statistics New Zealand Regional GDP Table.

In 1965-66, agriculture's share of GDP was 14%, but this fell steadily to 5.7% in 1986-87. Since the mid-1980s, its share of GDP has remained fairly stable at between 5-6% (Figure 11). This has occurred despite a decline in the area of land and the number of persons engaged in agricultural production. Similarly, the contribution of the food, beverage and tobacco manufacturing sector to GDP has also remained relatively constant in the range of 5-6% of GDP over the period.

**Figure 11. Share of agriculture and agro-food industries in GDP  
1987-2004**



Source: MAF (2007a) Statistical Annex.

The relatively constant share of agriculture in GDP has occurred in the context of a rapidly growing transport and communications sector, and has resulted from a significant increase in farm productivity. For example, the productivity of breeding ewes has risen by over 60% since 1990-91 (in terms of kilograms of lamb produced per breeding ewe), meaning that a similar level of lamb meat production is obtained from the current flock of 40 million sheep as was obtained from the peak flock of over 70 million sheep in the mid-1980s. Similarly, the quantity of milk solids produced per dairy cow has risen by over 30%. The increase has been the result of a number of factors including improved genetics, greater use of inputs such as nitrogen fertiliser and irrigation, and better management practices including pasture management (MAF, 2006a).

### **Diversification of activities by farm households in rural areas**

There has been considerable research into farm household diversification in New Zealand. Many commentators note the “diversification” that has taken place within the agricultural sector – the move away from sheep production towards beef and dairy production; an increase in “alternative” pastoral based activities such as deer and goat farming; and the growth in horticultural production, including kiwifruit, viticulture, olives, cut flowers, etc. (MAF, 1996; Joseph, Lidgard and Bedford, 2004; Smith, 2006; and Gouin, 2006).

This report discusses in more detail farm household diversification away from agricultural production, identifying two major forms: the development of on-farm, non-agricultural enterprises and off-farm employment. While considered separately, the two forms of diversification are not mutually exclusive. Taylor and McCrostie Little (1997) conclude that “perhaps the most surprising of the study findings is the relatively high level of off-farm employment amongst the farms with alternative enterprises. These households are involved in pluriactivity that provides income from multiple sources.”

Research shows that non-agricultural income earning activities (whether from an on-farm, non-agricultural enterprise or off-farm employment) takes place on 30-50% of New Zealand farms, are more likely to be undertaken by women, and that its importance in household income varies from year to year depending on commodity prices, *e.g.* very important in 2008 for deer farmers.

### ***On-farm, non-agricultural enterprise diversification***

In terms of non-agricultural activities, the previous section noted the movement of agricultural land into plantation forest production. While some of this resulted from the selling of farm land to large-scale forest owners, “the majority of new planting through the 1990s was undertaken by a variety of small-scale investors rather than the government or major forestry companies.” (Rhodes and Novis, 2002).

In terms of other enterprises, the most comprehensive study was that done by Taylor and McCrostie Little in the late 1990s, and reported in Taylor and McCrostie Little (1997) and (1999). Sixty farmers with alternative enterprises were identified and interviewed in depth. The research showed that farmers undertook a wide variety of enterprises on farms across a wide range of sectors including:

- farm tourism;
- specialist horticulture/nurseries, including specialized garden plants, shelter belt seedlings, trees and shrubs, and bulbs;
- agricultural processing (non traditional and organic), including medicinal herbs;
- food processing;
- viticulture and wineries;
- agricultural services and consultancy, including computer technology, stud stock recording, farm consultancy, real estate values and sales, seed cleaning and exporting, aerial and crop dusting/spraying, silage making, cultivation, large and heavy machinery use;
- general services, including journalism, computer software development and sales, importation and sale of vehicles;
- light manufacturing;
- handcrafts, including pottery;
- artwork; and
- fashion garment enterprises.

Another major finding was that alternative enterprises often run in parallel, sometimes across several sectors, such as garden tours and nursery sales or tea and gift shops, specialist food products and various crafts. The majority of the enterprises were financially and structurally independent of the farm business, being “stand alone” business structures. Most of those working with an integrated structure (44% was integrated with the farm business operation in full or part) described it as an “accounting mechanism”.

In contrast to the core farming operation, women had a high involvement in the alternative enterprises, in many cases as the major operator or as a joint operator with their male partner. It was evident that women operating enterprises had a high degree of motivation and considerable satisfaction from their work.

### ***Off-farm employment***

MAF research in the mid-1990s showed that 45% of dairy farms were supplemented by income gained from work done outside the farm gate and, despite the more remote nature, almost 41% of sheep

and beef farms had income from off-farm employment. Most of these farms considered their off-farm income “important” or “essential” for the household and/or for their farm business, with off-farm income significantly more essential on sheep and beef properties (Rhodes and Journeaux, 1995). Taylor and McCrostie Little (1995) found that for nearly two thirds of the off-farm employment households the additional income was either very important or important to their farm finances.

In the mid-2000s, off-farm income remains important. More than half the farm families interviewed in a Whakatane District (BOP region) survey were reliant to some degree, or had in the past been, on off-farm income to supplement returns from farming (Joseph, Lidgard and Bedford, 2004). The 2007 Pastoral Monitoring report estimates a “national” dairy farm budget within which off-farm income contributed NZD 12 000 with a further net farm profit after tax of NZD 42 000 in 2006/07. The importance of off-farm income was higher in the “national” sheep and beef farm budget, contributing NZD 17 000 with a net farm profit after tax of NZD 33 000. The report concluded that off-farm income is now firmly a part of many sheep and beef farm businesses. Off-farm income has contributed even more significantly to the financial viability of deer farmers over the last four years (MAF, 2007b). Analysis of the New Zealand 2001 Census data found that the agricultural sectors of the economy had the highest incidence of multiple job-holding (Robertson *et al.*, 2007).

There are indications of gender differences in off-farm work. Men were more likely to be employed in seasonal work in agriculture-related activities, such as harvest contracting and “locum farmers”, although they were also employed as casual labourers, factory hands, truck drivers and tourism workers. For women, regular work was more common, and employment in the nursing and teaching professions dominated. These occupations are attractive because they are available on a part-time basis or with timing that is compatible with having responsibility for school-aged children. Studies indicate that more women do off-farm work than men and have generally worked off the farm for a longer period of time (Underwood and Ripley, 2000).

Interviews carried out in 2002-03 among 15 farm households found women to have higher rates than men of multiple job-holding. For these women, there was an important relationship between their off-farm work and cycles of family development; the interviews showed that a number of women worked full time before having children and moved into part-time work when they returned to work in order to balance their paid work with their child rearing responsibilities (Taylor and McClintock, 2004).

### **Factors enhancing/limiting farm household diversification into non-agricultural activities**

A major factor explaining household diversification into non-agricultural activities identified by researchers is a desire to obtain an alternative source of income. Studies show that on-farm, non-agricultural enterprises and off-farm employment were important strategies adopted by farm households facing cyclical commodity prices, periodic rises in farm input prices and climatic events such as prolonged drought. “This pluriactivity helped to maintain farm household incomes, while it defended farm equity and provided greater opportunity for retirement and family succession.” (Taylor and McClintock, 2004).

An important driver for this was the subsidy reform programme that began in 1984, the impact of which has been well documented. One of the initial farmer responses (along with a reduction in capital expenditure, labour force, fertiliser, etc) was to seek off-farm employment. “It was often only where off-farm work was available that many farm-households were able to survive.” (Smith, 2006). “A number of coping strategies were adopted by farmers in the face of unfavourable ‘terms of trade’ at the farm gate... Strategies being deployed include intensification or “going organic” on the business side and off-farm work on the family side... The variety and complexity of coping strategies adopted on the family farm reflect its dual nature as a business and household unit.” (Joseph, Lidgard and Bedford, 2001).

The removal of subsidies had not only an impact on farm income but also on land values, which declined in the late 1980s. This in turn made borrowing difficult for farmers, creating a further incentive to seek alternative income sources (Rhodes *et al.*, 2003). The decrease in land values, along with a log price spike in the early 1990s and changes to taxation rules (*i.e.* the removal of the “cost of bush” account and reintroduction of immediate deduction of qualifying costs against income from any source in 1991) contributed to the diversification into forestry (Rhodes and Nevis, 2002). In the mid-2000s, the situation is almost completely reversed, with land moving out of forestry and into dairy production following significant increases in land values; a drop in log prices at a time of high world dairy prices; and uncertainty regarding the financial implications to forestry of proposed legislative changes being introduced as a result of New Zealand’s Kyoto commitments.

In addition to subsidy reform, the government has contributed to diversification through a focus on facilitation. During the 1990s a number of government agencies worked together as facilitators with community groups to help them build their social and economic capacity to create wealth and well-being (Pomeroy, 1998). For example, from 1992 to 2006 MAF published and distributed a free monthly publication called *The Rural Bulletin*. Its aim was to build community capacity by circulating relevant information, so people in rural and other communities have an opportunity to make informed decisions about, and have their say on, issues and changes that may affect them. Further examples of facilitation are discussed in the following section on farm tourism.

MAF involvement in facilitation has been significantly reduced in recent years. In its final issue, MAF explained that “The environment has changed markedly since the Rural Bulletin was first published in 1992. In particular, widespread access to the Internet has made this information much more accessible to people.” (MAF, 2006b).<sup>8</sup>

In terms of *financial incentives*, the major programme initiated to encourage farm household diversification into non-agricultural activities is the East Coast Forestry Project (ECFP), which has been operating since 1992.<sup>9</sup> Under the ECFP landholders tender for government grants which help fund the cost of establishing and managing the forest. While the primary purpose of the ECFP is to reduce soil erosion, it has had a wider impact on the commercial viability of farms and regional employment. “For some farmers, converting marginal land into another productive land use has clearly helped the overall efficiency of the farm, in terms of removing difficult areas to manage and muster for stock. This has allowed farmers to intensify production on the remaining land areas, improving the overall productivity of the farm. This will have long term benefits.” (Bayfield and Meister, 2005).

The Sustainable Farming Fund (SFF), established in 2000 and administered by MAF, has provided grant money to assess non-agricultural land use options, specifically forestry. The purpose of the SFF is to support projects that assist the land-based primary production sectors solve problems and take up opportunities to overcome barriers to economic, social and environmental viability. Of the 527 projects

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8. It is now a free publication produced by Rural Women New Zealand.

9. The initial objective was to plant 200 000 hectares of commercial forest over 28 years on severely eroding and potentially erodible land in the East Coast of the North Island. Between 1993 and 2000, some 26 030 hectares were planted – an average of 3 254 hectares per year against a target of 7 000 hectares per year. Following an evaluation of the ECFP the objective was modified in 2000 to target 60 000 hectares of the most at risk lands plus immediate surrounding areas. The total area established from 2001-04 was 5 677 hectares, of which 60% was target land – an average of 830 hectares per year of target land against an annual target of 3 000 hectares. While the relative price signals and the disappearance of a forestry company have been very influential factors in the slow uptake, other factors such as the complexities of the scheme and its purely voluntary nature have also influenced the rate of uptake of grants (Bayfield and Meister, 2005).

totalling NZD 71 million completed or approved at the end of 2007, around 6% (NZD 4.1) was spent on 48 forest related projects.<sup>10</sup>

On the other hand, the compliance costs associated with governmental *regulations*, established at both the central and local government level, are often limiting alternatives. The Resource Management Act (RMA) is perceived as a major impediment, for example to new forestry processing plants, and the increased complexity of employment related legislation falls most heavily on small businesses such as farm and orchard operations. “Regulatory barriers such as the RMA may directly preclude investment, however in many cases the problems arise because they create uncertainty around the standards that have to be met, the time that resource consent and other processes take, and the costs that will be incurred.” (MAF, 2003b).

While the motivation to obtain alternative income has been important in New Zealand agriculture, particularly during the late 1980s and early 1990s, researchers note that *non-economic factors* played a role during this period and appear to be more important since then. “Post-1984, long-established trends in technology, demography and lifestyle have continued to conflate the impacts of restructuring... Even coping strategies, such as increased off-farm work, that seem integral to agriculture may be driven in part by lifestyle choices by women.” (Joseph, Lidgard and Bedford, 2001). Researchers point out the general societal trend towards dual incomes, casualisation of work, and individualisation — even of the nuclear family household. Further, “the drive for many farm women and men to work off the farm, and/or develop alternative enterprises, may be stronger than ever, despite relatively high levels of farm income in recent years....driven by personal fulfilment and the entrepreneurial ethos of farm families to fully utilise farm and household resources and labour.” (Taylor *et al.*, 2003).

Taylor and McClintock (2004) report on a sample of 60 farm men and women interviewed in the Ashburton District in 2003. Their research shows that multiple job holding amongst farmers has become established as a long-term feature of farm households. “While in the 1980s and early 1990s farm men and women appear to have moved into multiple jobs largely because they had to, this research shows that the reasons are now more complex. The respondents now hold multiple jobs by choice rather than necessity.” These non-economic reasons comprised four main categories: they were approached, or persuaded, by others to take up a job; they wanted to follow a particular profession or occupation; they chose a particular lifestyle, *e.g.* wanted to broaden their interests by having a non farming occupation; and they needed social contact off farm with other people. All but one of the respondents who said they worked off-farm to meet other people were women.

Some commentators note the entrepreneurial spirit of farmers as a factor playing a role in farm household diversification. For example, Smith suggests that the enterprise development that has taken place over the past twenty years is not necessarily a direct consequence of the 1984 reforms, noting that “similar experimentation with carob trees, date palms, silk, ostrich, olives, grapes and citrus can be traced back into the late 19<sup>th</sup> century, which perhaps reflects an on-going spirit of entrepreneurship characteristic of the New World.” (Smith, 2006). “This picture of multiple and evolving enterprises reinforces a very strong picture of entrepreneurship on New Zealand farms.” (Taylor and McCrostie Little, 1999).

On the other hand, a study on off-farm income in seven households concluded that: “Whether the experience of off-farm work is a positive one for the farming families themselves depends, to some extent, on their circumstances and attitudes. The case studies illustrate that for some farmers, off-farm work is an admission of defeat or failure. The sense of being forced into working off-farm, combined with farming systems that had not been adapted in a planned way to increased time pressures, resulted in an

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10. Figures sourced from the Sustainable Farming Fund database, extracted on 19 December 2007, [www.maf.govt.nz/sff/about-projects/search/](http://www.maf.govt.nz/sff/about-projects/search/).

unsustainable situation for one of the case study farms. For others, working off the farm is part of a success story, in which off-farm income is used to achieve personal and family goals” (Parminter, 1997).

Finally, improved accessibility in terms of both transport and communication links have increased the opportunities for farm households to diversify into non-agricultural activities. Faster and cheaper transport has played an important role in closing the distance between rural and urban areas (Pool *et al.*, 2005). The internet has been successfully used to market both agricultural products (*e.g.* many vineyards use the internet as a medium through which their wine can be purchased) and non-agricultural (*e.g.* farm stay accommodation).

## **Focus on farm tourism**

### ***Farm tourism in New Zealand***

Obtaining data on the number of farms involved in tourism is difficult. There is no consistent time series and studies which include farm tourism are often one-off snapshots of a wider tourism sector. Nevertheless, a review of the literature does suggest that there has been a significant growth in farm tourism over the past twenty years. For example, “Best estimates suggest that...over 1 000 farms were hosting guests on a regular basis in 1988” (Pearce, 1990). By the late 1990s, it was estimated that there were over 2 000 farm-stays (Hogh, 1999).

Tourism New Zealand (TNZ) now collects and publishes quarterly statistics relating to the hosted accommodation sector within the broader commercial accommodation sector (TNZ, 2007a). However, this data only includes those establishments that are GST registered and have an annual turnover of at least NZD 30 000. It is estimated that 3 000-3 500 small operators in the hosted accommodation sector are excluded, including the vast majority of farm accommodation. These small operators make up 80-85% of hosted accommodation establishments (less in terms of guest capacity). Between 2001 and 2006, the TNZ hosted accommodation sector grew by 14%, rising from 507 000 to 577 000 guest nights, although it represents less than 2% of mainstream commercial accommodation guest nights. International visitors represent 63% of hosted guests, up from 56% in 2001. The majority of hosted guests are women.

A wide range of tourism services are provided by farms. Accommodation is the most common form. Just over half of the entrepreneurial enterprises surveyed in the late 1990s provided accommodation, which ranged from bed and breakfast to fully catered (Taylor and Little, 1999). Respondents who offered farm accommodation discriminated between “home hosting” (being dinner, bed and breakfast) and “farm stays” (which involved more active observation of the farm). Self-contained accommodation facilities appear to be less important in New Zealand than in other countries. In comparing the United Kingdom and New Zealand, Clarke noted that the accommodation product was subtly different. “For New Zealand, more significant were interaction with local people and possible farm participation.” (Clarke, 1995).

In addition to accommodation, a number of agricultural related tourism activities are provided. The most common attractions on the farms, apart from accommodation and meals, were the homestead gardens, the “farm yard” animals and associated activities such as shearing and watching the dogs working, or simply enjoying the ambience of the farm and countryside (Taylor and Little, 1999).

Farms are often available for day visits. For example, Rural Tours offer technical and special interest visits to farms and orchards, involving a tour of the facilities and a question and answer session with farmers. This service is particularly aimed at business travellers (who do not have time during their visit to stay on a farm) or those wanting to add an educational aspect to their holiday. Many visitors are interested in learning how unsubsidised agricultural producers operate ([www.ruraltourism.co.nz](http://www.ruraltourism.co.nz))

Another example is wine tourism, which has developed in line with the expansion of the viticulture industry. Between 2001 and 2006, the area in productive vines increased by 94% (to 22 616 hectares) and the number of wineries by 39% (to 530). Over the same period, the number of international visitors to wineries rose from 108 000 to 225 000 persons, an annual average increase of 16%. In 2001, 5.4% of all international tourists visited a winery: by 2006 this had increased to 8.2%. International tourists represent 45% of wine visitors, 55% are domestic tourists. Domestic numbers are more erratic with less than 1% visiting a winery during a year (TNZ, 2007b).

Farmers have also developed non-agricultural related tourism services. Sometimes these are available on the farm itself: others involve travel to off-farm activities. These are often, but not necessarily, associated with farm stays. For example, properties located in the South Island high country can provide a mountain experience, with opportunities to go skiing and participate in other winter sports. In the summer there are opportunities to go trekking. Some farming properties are located in sites that are sought after for hunting of deer and other large animals, and for fishing. Some farms have developed wilderness areas where they manage a deer herd for trophy hunting for a stag with a large set of antlers.

A further example is the development of private walkways offering trekking experiences, often located in coastal areas. This service was pioneered in New Zealand by the Banks Peninsula Track, near Christchurch, which opened on 1 December 1989. The unique two or four-day tramp across farmland and environmental reserves covers 35 kilometres of spectacular volcanic coastline, fringing a marine mammal sanctuary around the south east bays of Banks Peninsula previously inaccessible to the public. The track passes through six farm properties plus Department of Conservation land, with accommodation provided by four landowners in farm buildings. Around 2 700 people walk the track each year. The farms involved receive an income from the track fees (walkers are charged NZD 225 for the four-day option covering transport and accommodation), who are responsible for track maintenance (Cloesen, 2007; Rural Delivery, 2007). There are now 25 private walking tracks on farms around New Zealand. ([www.whirsh.wv.co.nz](http://www.whirsh.wv.co.nz)).

Native wildlife that are endangered and being managed to assist their survival are also keenly sought after in rural tourism locations. A good example of this is the coastal farm that operates Penguin Place, the Yellow Eyed Penguin Reserve that has won several Eco-tourism awards. The conservation project was established in 1984 by two farmers when there were just eight breeding pairs. The number of breeding pairs has since increased (there were 19 pairs breeding in the colony in the 2006-07 summer but it varies from year to year). Visitors are taken on a guided tour through the colony using covered trenches and observation huts so that the penguins are not frightened and the viewer can observe them unperturbed by human presence. The nature reserve is part of a sheep farm, and the owners have attempted to create maximum breeding opportunity for the penguins while minimizing the loss of grazing land. ([www.penguinplace.co.nz](http://www.penguinplace.co.nz))

### ***What factors explain the development of farm tourism***

Research suggests a number of factors explaining the development of farm tourism. In New Zealand the phenomena dates from around the 1970s, “and was initially driven by the exertions of the coordinating companies, who both persuaded farmers into hosting and tourist operators into accepting farm stays on their programmes.”(Clarke, 1995).

Following the removal of government financial support in the mid-1980s, farm tourism was seen as one of the options for providing alternative income whether to ensure farm survival, obtain additional income for children’s education, or for some other reason. A survey of 93 farm stay operators in 1997 found that “the average farm stay in New Zealand contributes 35% of the total on-farm income.” (Shakur and Holland, 1999). The survey found considerable regional variation. Those with the greatest proportion of income from farm stays tend to be close to the country’s main city centres, *i.e.* closer to Auckland,

Wellington and Christchurch. Research undertaken by the Centre for Research, Evaluation and Social Assessment, (CRESA) shows tourism in general makes an important contribution to the overall income in rural communities and enables many to stay there (Warren and Little, 1999).

While important, Warren and Little concluded that it is not necessarily a big money spinner – the mean average gained from tourism in rural areas is NZD 10 000 a year. @home New Zealand, the brand name of The New Zealand Association of Farm & Home Hosts, answers the question “Will I make money from being a B & B operator?” with the answer “not really”, explaining that “income derived from providing small scale accommodation is usually ‘secondary’ income for operators..., if you look at the value of your property and divide your income into that value to give a return on capital — you may be quite disappointed. Therefore, if the motivation to run an accommodation business is simply to ‘make money’ you should probably not consider this sector.” (@home New Zealand, 2007).

In addition to a financial return, all research into farm tourism in New Zealand point to the social benefit received by the hosts as an important motivation. For example, “whereas in the United Kingdom, farm tourist accommodation was commercially driven, New Zealand hosts were primarily motivated by a desire to meet people” although there was a commercial awareness” (Clarke, 1995). The 1997 survey of farm stay tourism operators “found that an overwhelming majority of farm stay operators indicated that the main reason for establishing the farm stay operation was the personal satisfaction of meeting people and learning new cultures” (Shakur and Holland, 1999). The @home New Zealand website answers the question “So why do it?” by explaining that “to all of our members, the joy of meeting interesting people from around the world and showing them some good old fashioned ‘Kiwi hospitality’ by sharing your home is the motivation for being involved in this ‘game’... it is the social interaction between you and your guests that is the best reason to get involved in this business.” (@home New Zealand, 2007).

The reasons for this social motivation are varied. Some researcher point to the fact that “women dominate the management of New Zealand’s farm stay business (80%), three quarters of whom have a mean age of 46 years. At this age many of their children would have either left home or would be teenagers.” (Shakur and Holland, 1999). Others note the ability of farm tourism to counteract the isolationism of living in remote areas. Finally, research shows tourism hosts are often travelled and sophisticated, and enjoy the intellectual stimulation from meeting and hosting people (TNZ, 2002).

During the early to mid 1990s, the government played a facilitator role in encouraging farm tourism. “MAF’s work in rural tourism is an example where a facilitation programme aimed at reinforcing the goals of sustainable agriculture has identified another commercial land use. The initiating framework was the former Minister of Agriculture’s Rural Strategy Groups, set up to assist farmers to overcome the malaise of adverse climatic events, low commodity prices and economic restructuring. The groups were run by MAF regional staff to assist farmers and other landowners identify local economic opportunities....MAF’s work has achieved four outcomes. MAF has: assisted local communities and farmers to identify an economic opportunity; brought the needs of rural tourism operators to the attention of the tourism industry; facilitated the flow of information on rural tourism to potential operators, communities, local government and other agencies; and, been a catalyst in developing support and commercial networks between operators.” (Pomeroy, 1997). The facilitation role included the publication of a book entitled *Thinking of starting in rural tourism? A resource book* in 1994.

Another factor that played a role in developing accommodation services was the establishment of an industry organisation. The New Zealand Association of Farm & Home Hosts was established on 17 July 1987 by an association of personally hosted accommodation owner/operators throughout New Zealand at the request of what was then the New Zealand Tourism Board. The Board wanted the increasingly popular and expanding hosted accommodation sector to have a national voice and provide quality assurance.

Whilst the legal name continues, the day-to-day name of @home New Zealand was adopted in 2003 when the organisation was re-branded.

There has also been an increase in demand for farm tourism services. “Farmers are taking advantage of more broadly based changes in New Zealand’s economy, especially the increasing importance of international and domestic tourism as sources of profit for businesses in rural as well as urban areas.” (Joseph, Lidgard and Bedford, 2001). The number of international visitors to New Zealand has risen from 1.6 million in 1999 to 2.5 million in 2007, an annual increase of over 7%. The changing demographic nature of the domestic population has also had an impact on demand. Most New Zealanders, while living in an urban environment, recognise the importance of agriculture to the economy and/or their farming roots. With the days of being able to holiday on the farm of family or friends a thing of the past due to a reduction in the number of farms, many families take their children to farm stays.

### **Multiplier effects of agriculture and other rural activities**

Statistics New Zealand has been producing national level input-output tables on a regular basis since 1953. The 1996 inter-industry study, covering the year ended March 1996, was the ninth and most recent study to be undertaken by Statistics New Zealand. Within New Zealand, no official regional input-output tables are compiled. Private developers use non-survey-based methods for regional input-output table development that rely on the national level input-output tables published by Statistics New Zealand. It is unlikely that an official statistical series would be developed using current regional input-output methodologies employed in New Zealand, due to key methodological issues (SNZ, 2003).

At the national level, a comprehensive analysis of the production structure and inter industry linkages of all sectors in the economy based on the 1996 input output tables, was recently undertaken by Claus (2002). The study include the calculation of a value added production multiplier, measuring the direct and indirect contribution of a unit increase in final demand to value added in a specific industry relative to other industries. Table 4 presents the ranking of the agricultural sectors and selected other industries relating to agro-food industries, tourism and public services according to their value added production multiplier.

Regional input-output tables and related multipliers have been established for agriculture and other industries in reports measuring the impact on a local economy of: natural events (*e.g.* Bevin, 2007); land use changes, such as the move away from agricultural production into plantation forestry (*e.g.* Butcher, 1997); or major regional economic development issues such as water allocation (*e.g.* Harris *et al.*, 2004). These studies are not comparable because they vary in terms of the economic variable being considered, *e.g.* employment or GDP multipliers, and the range of direct, indirect and induced multiplier effects included.

Bevin reports on the medium-term economic effects within the East Coast of the North Island of a major drought which impacted the sheep and beef farming sector during the first half of 2007.<sup>11</sup> The East Coast is a key component of the New Zealand sheep/beef farming sector, accounting for approximately a quarter of national sheep/beef livestock numbers. The study estimates that the sheep and beef sector in the East Coast has a regional gross output multiplier of 3.1; a value added/GDP multiplier of 2.8; and a net household income multiplier of 2.2. Multipliers for other sectors are not calculated.

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11. For the purposes of Bevan’s study the East Coast comprises the Gisborne and Hawke's Bay regions, and the territorial districts of Tararua, Masterton, Carterton and South Wairarapa.

**Table 4. National ranking of selected industries according to their value added production multiplier**

Industry	Ranking (rank out of 126 industries)
Central government administration	6
Local government administration services and civil defence	8
Bars, cafes and restaurants	13
Meat processing	14
Accommodation	21
Forestry	27
Dairy product manufacturing	40
Dairy cattle farming	43
Services to agriculture, hunting and trapping	46
Other horticulture	53
Kiwifruit growing	60
Apple and pear growing	62
Fruit and vegetable, oil and fat, cereal and flour manufacturing	63
Other farming	64
Logging	65
Mixed livestock and cropping	73
Other fruit growing	75
Services to forestry	79
Sheep and beef cattle farming	86

Source: Claus, 2002

Butcher considers the employment effects of expanding forest production in the Mackenzie/Waitaki Basin. The study estimates that sheep farming in the Basin generates 0.33 Full Time Equivalent job (FTE) directly for every 1 000 Stock Units (SU). The additional impacts of farm spending and purchases of inputs make a total employment impact in the Basin of 0.4 FTEs per 1 000 SU. Forestry, excluding processing, is estimated to generate perhaps 3.9 jobs in the Basin per thousand hectares. Butcher concludes that “as long as forestry displaces less than 10 SU per hectare, employment will eventually be higher under forestry than under farming.”

Harris *et al* study the economic costs and benefits to the Waitaki catchment of various alternative uses of the water contained in the Waitaki River, *e.g.* irrigation schemes and hydroelectric power generation.<sup>12</sup> In carrying out the study, output, employment and value added multipliers were calculated for the Waitaki catchment for various industries. Table 5 presents the results for a selected range of industries, ranked according to their value added multiplier.

It could be tentatively concluded, based on the limited range of studies, and with the caveats noted above, that in terms of its value added multiplier agricultural production ranks lower than agro-food industries, industries associated with tourism and public services. Within agriculture, dairy and horticulture appear to rank higher than sheep and beef farming. However, as shown in the two tables, rankings are likely to vary at a regional level from those calculated at the national level.

12. The Waitaki catchment is defined in the study as North Otago and South Canterbury, covering the Waitaki District Council, Waimate District Council, Mackenzie District Council and Timaru District Council areas.

**Table 5. Ranking of selected industries in the Waitaki catchment according to their value added multiplier**

Industry	Multiplier		
	Output	Employment	Value Added
Meat processing	1.98	2.65	3.18
Dairy product manufacturing	1.66	4.05	3.07
Central government administration	2.36	1.88	2.86
Local government administration	2.32	2.70	2.47
Accommodation, bars, restaurants and cafes	2.21	1.36	2.15
Services to agriculture	2.01	1.40	1.93
Horticulture and fruit growing	2.24	1.35	1.92
Dairy cattle farming	1.98	1.56	1.64
Livestock and cropping farming	1.64	1.40	1.55
Other farming	1.57	1.32	1.43

Source: Harris et al., 2004.

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## ANNEX 1.

### BACKGROUND MAPS AND TABLES

**Annex Table 1. Sample construction of the rurality index**

Home address meshblock	Workplace address meshblock percentage of employed population				Urban area multipliers			Index Number
	Main	Second	Minor	Rural	Main (x4)	Second (x2)	Minor (x1.5)	
2311	0	0	0	100	0	0	0	0
2806	0	3.1	0	96.9	0	6.2	0	6.2
2761	0	4.4	22.2	73.3	0	8.8	33.3	42.1
2817	0	28.6	42.9	28.6	0	57.2	64.3	121.5
2500	40.2	0	14.9	44.8	160.8	0	22.3	183.1
2486	54.5	0	6.8	38.6	218	0	10.2	228.2
2712	100	0	0	0	400	0	0	400

Index

0 – 25 Highly rural/remote areas

26 – 100 Rural areas with low urban influence

101 – 200 Rural areas with moderate urban influence

201 – 400 Rural areas with high urban influence

Source: Goodyear (2005).

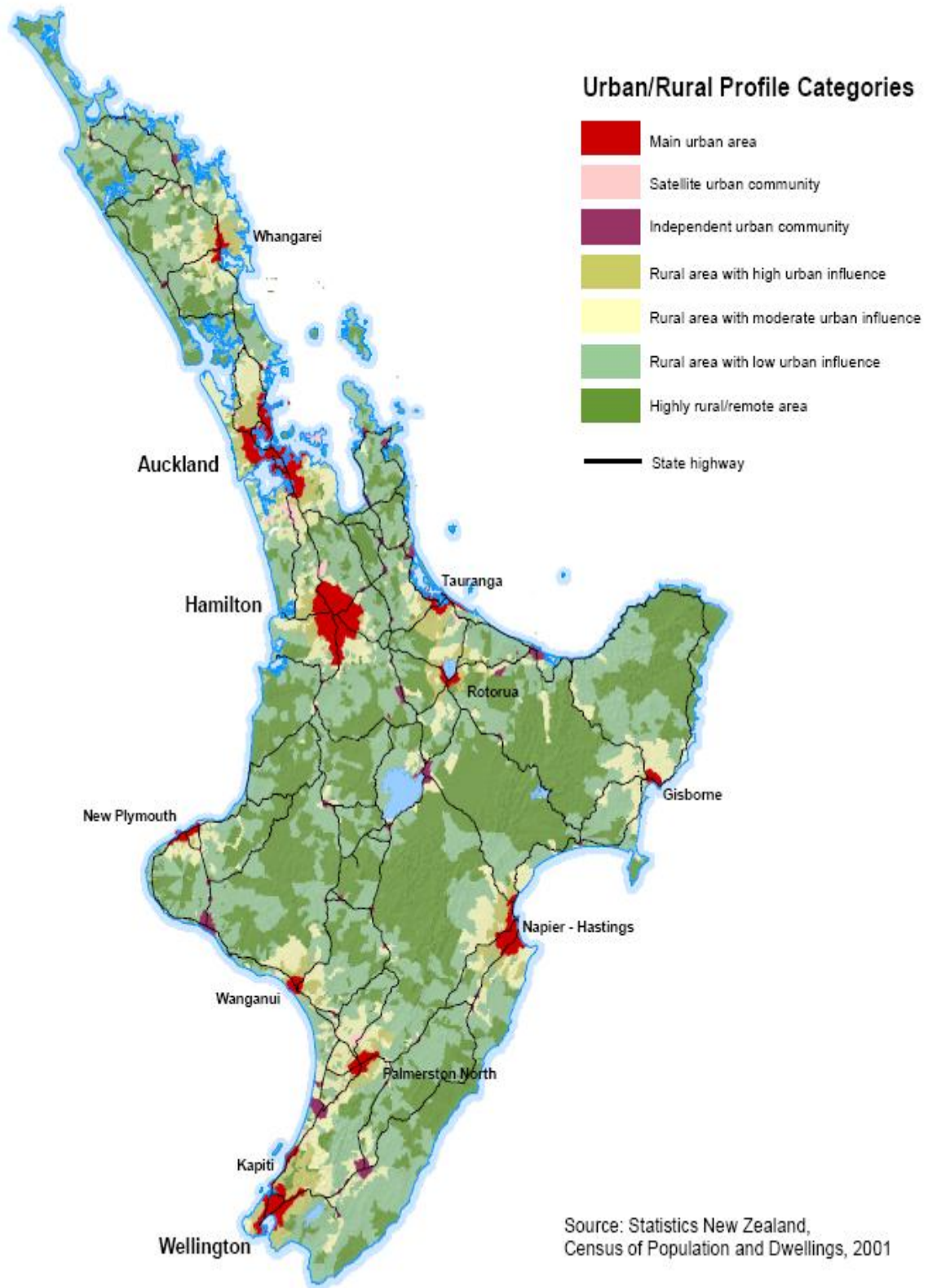
The three biggest regions in terms of land area are found in the South Island: Canterbury, Otago and Southland. Auckland, Canterbury and Wellington are the largest in terms of population, employment, and GDP. Apart from Auckland and Wellington, Taranaki and Southland are the only regions where the share of GDP is greater than their share of population.

**Annex Table 2. Share of regions in total land, population, employment and GDP, 2001**

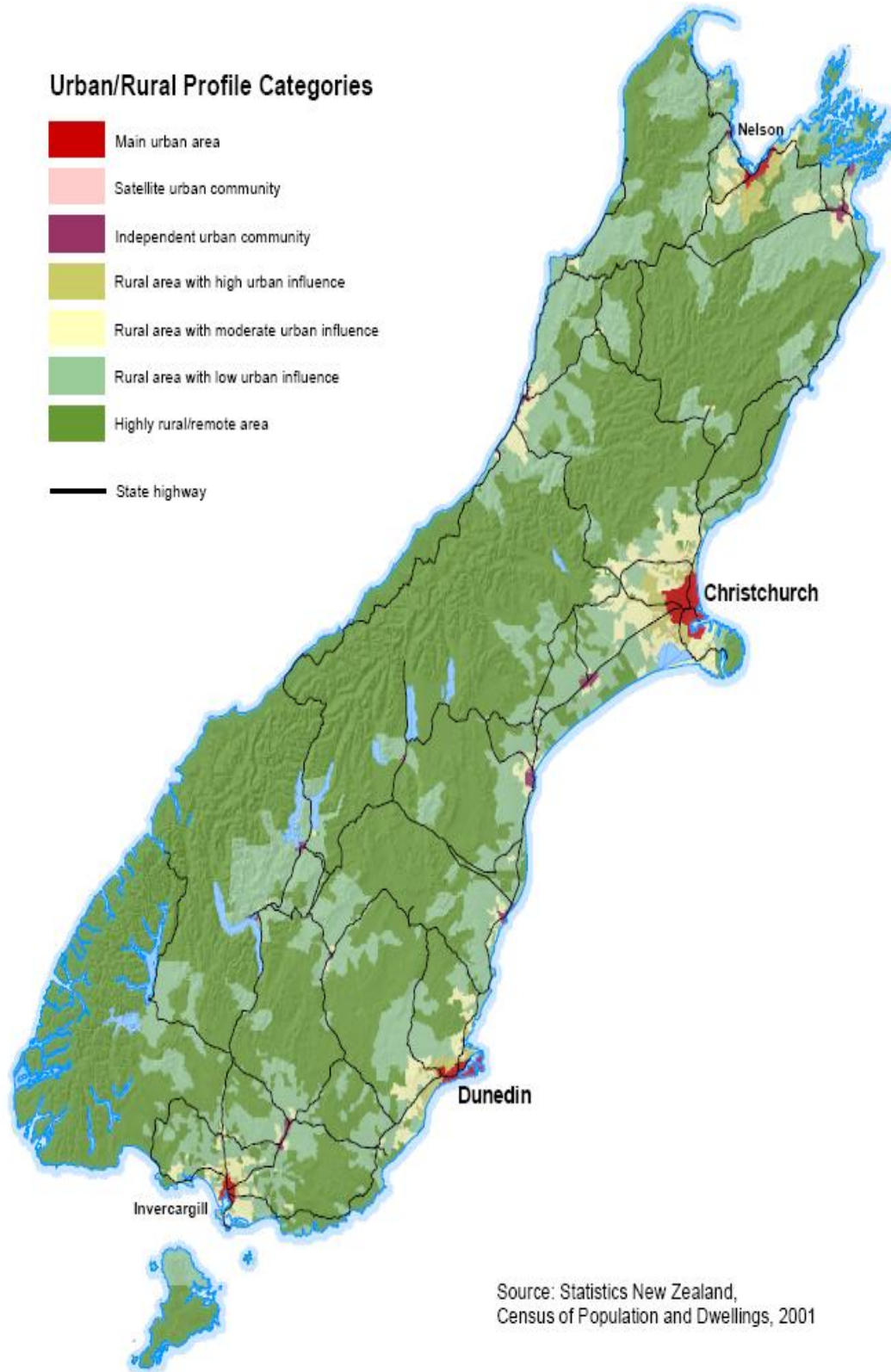
	<b>Land</b>	<b>Population</b>	<b>Employment</b>	<b>GDP</b>
New Zealand (million)	27.035 hectares	3.737 persons	1.727 persons	115,941 2003\$
Total North Island	43.4	75.7	74.5	78.7
Northland	4.8	3.7	3.2	2.7
Auckland	1.9	31.0	30.9	34.7
Waikato	9.1	9.6	9.4	8.7
Bay of Plenty	4.6	6.4	5.8	5.3
Gisborne	3.2	1.2	1.0	0.8
Hawke's Bay	5.4	3.8	3.7	3.3
Taranaki	2.8	2.8	2.7	4.0
Manawatu-Wanganui	8.5	5.9	5.7	4.5
Wellington	3.1	11.3	12.1	14.7
Total South Island	56.8	24.3	25.4	21.3
Tasman and Nelson <sup>1</sup>	3.9	2.2	2.3	1.8
Marlborough	4.0	1.1	1.1	0.9
West Coast	8.9	0.8	0.8	0.7
Canterbury	17.1	12.9	13.6	11.4
Otago	11.9	4.9	5.0	4.0
Southland	11.0	2.4	2.6	2.5

Source: SNZ (2006a) and SNZ (2006b).

Annex Figure 1. Urban/Rural profile categories, North Island



Annex Figure 2. Urban/Rural profile categories, South Island



Annex Figure 3. The sixteen regions of New Zealand



Source: SNZ (2007).