

THE ROLE OF AGRICULTURE AND FARM HOUSEHOLDS IN THE RURAL ECONOMY

Main findings of a report prepared for the OECD Trade and Agriculture Directorate

by Darryl Jones¹

A New Zealand country study examining national definitions of rurality, the role of agriculture, and the diversification of farm income, with a focus on farm tourism, has been prepared for the OECD. Rural areas are defined in national statistics on the basis of population (residual outside settlements of 1,000 or more persons). Rural areas account for 97% of total land area, and around 14-15% of national population, employment and GDP. The rural population continues to increase, predominately in areas with high or moderate urban influence. Farming accounts for 43% of total land area, 5% of national population, employment and GDP, but is far more significant in all regions outside Auckland and Wellington. Farm tourism, including accommodation, day visits, and non-agricultural activities such as trekking, has expanded since the mid-1980s, driven by factors such as financial and social benefits.

Background

1. The OECD Trade and Agricultural Directorate is currently examining the role of farm households and the agro-food sector in the rural economy. This work is being undertaken in response to the concerns of some OECD countries that their commitment to make further progressive reductions in domestic agricultural support and border protection will have a variety of negative impacts on rural areas because agriculture is still a key sector in managing land and many ancillary industries may be dependent on agriculture. The study intends to provide up-to-date information on the role of agriculture and related industries in rural economies (land use, population, employment and GDP) and the income portfolio of farm households, and assess the policy stance with respect to farm household integration in the rural economy. As part of the information gathering exercise, twelve country case studies are being prepared, including one on New Zealand. This adjunct paper is an abridged version of the New Zealand country paper, from which some broad conclusions relating to the conference theme can be drawn.

Definition of rural areas in national statistics

2. The standard Statistics New Zealand (SNZ) urban/rural classification system is based on population size. Urban areas are defined as settlements of 1,000 people or more, further categorised into “minor urban areas” (populations between 1,000 and 9,999), “secondary urban areas” (populations of 10,000 to 29,000) and “main urban areas” (populations of 30,000 or more). There are two rural categories. “Rural centres” are defined as settlements with a population of 300 to 999 in a reasonably compact area that services surrounding rural areas. They have a defined statistical boundary (an area unit) but no legal status. “Other rural” is the urban/rural area classification residual category.
3. As a project of the 2001 Census, SNZ developed an alternative urban/rural classification system which uses workplace address compared to address of usual residence as a means of measuring “rurality”. It 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. Main urban areas remain the same, but minor and secondary urban areas are reclassified into either satellite or independent urban communities. Meshblocks in rural areas are allocated to one of four categories (rural areas with high, moderate or low urban influence, and highly rural/remote areas) based on a weighted percentage of resident employed adults who work in the three standard categories of urban area. The weighting system recognises the availability of services provided by different sized urban areas. For example, the weighting given to a rural resident working in a main urban area is twice that of a rural resident working in a minor urban area.

¹ PO Box 27, Russell 0242, phone (09) 403-7481, darrylshae@hotmail.com

Rural areas in the national and regional economy

4. Rural areas account for 97% of land in New Zealand, and around 15% of population, employment and GDP (Table 1). The vast majority of the population is concentrated in urban areas, which occupy less than 3% of New Zealand's land area. There are marked ethnic differences in urbanisation. While the European and Māori populations are similarly split between urban and rural areas (84/16 for both groups), the vast majority of Pacific peoples, Asian and Other ethnic groups live in main urban areas with very few in rural areas.

Table 1. 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 ¹
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	

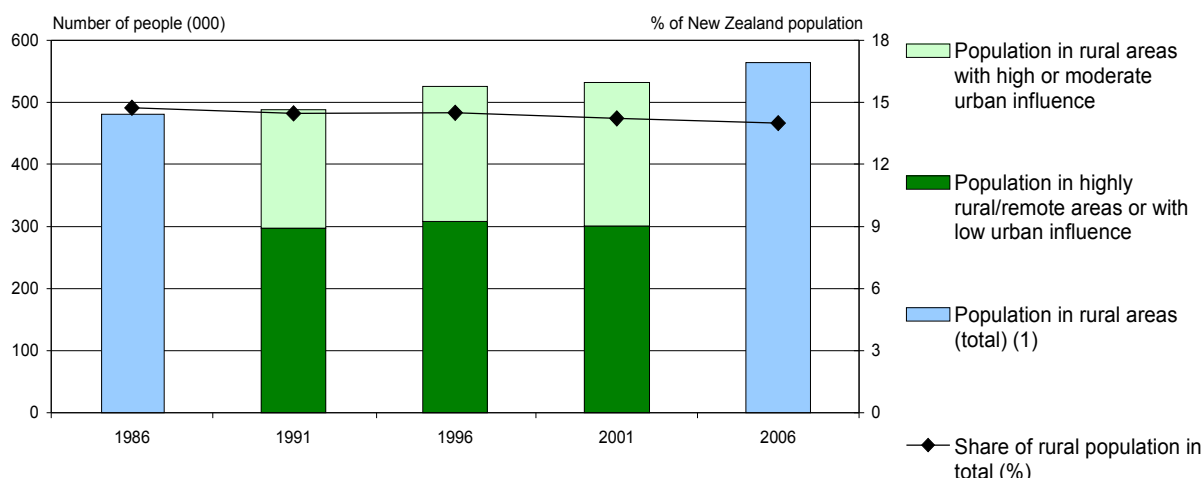
Note:

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

Source: Statistics New Zealand

5. The proportion of the New Zealand population defined as rural has remained fairly stable at around 14% over the last twenty years (Figure 1). Between 1986 and 2006, the rural population increased by 17 percent, from 481,000 to 564,000 persons. 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.

Figure 1. Change in rural population, 1986-2006



Note:

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

Source: Statistics New Zealand

6. There are important differences in terms of the share of rural land and people between regions (Table 2). Outside Auckland, over 93% of land is classified as rural within each of the other fifteen regions. 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. Excluding Auckland and Wellington, just over 20% of the remaining New Zealand population live in rural areas.

Table 2. 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 ^{1,2}	100.0	22.0	23.6
Marlborough ²	100.0	22.6	24.7
West Coast ²	100.0	41.3	43.0
Canterbury	98.8	14.4	16.4
Otago	98.3	19.3	21.4
Southland ²	100.0	29.9	34.4

Notes:

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: Statistics New Zealand

7. Gisborne, Northland, Southland and West Coast could be considered the most rural of the sixteen regions (Figure 2): with more than 25% of the population living in rural areas and more than 40% of these living in the two rural classifications with the least urban influence. Auckland and Wellington are the most urban. In all other regions less than 25% of the population is defined as rural, but more than 40% live in the two rural classifications with the least urban influence.

Figure 2. Identification of rural and urban regions, 2001

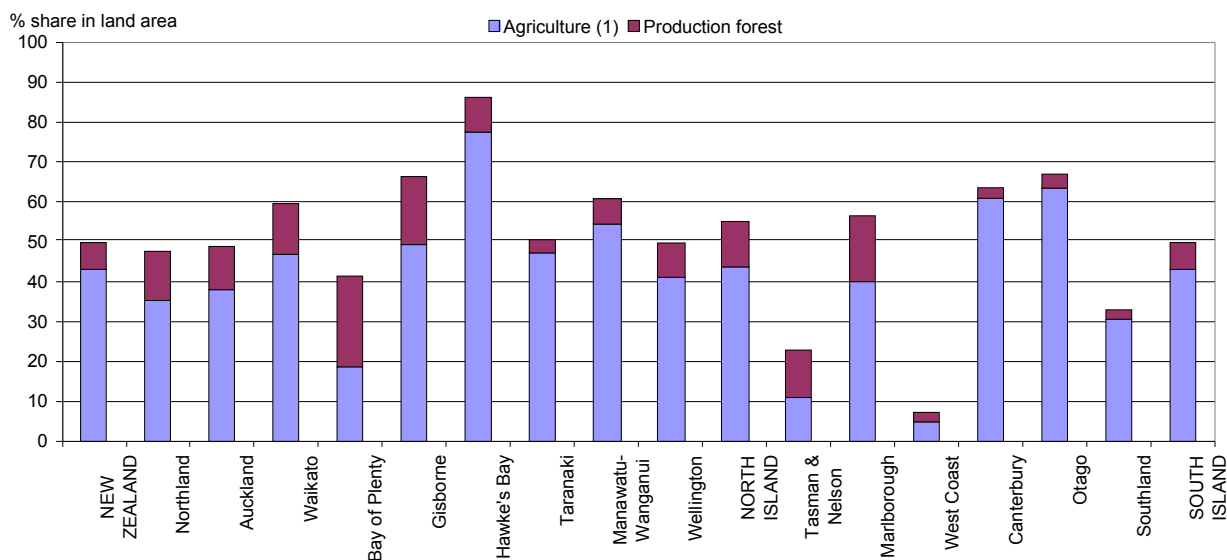


Source: Statistics New Zealand

Role of agriculture and agro-food industries

8. 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, with a further 7% in planted production forest (Figure 3). Agriculture accounts for 50% or more of land area in the Hawke's Bay, Otago, Canterbury and the Manawatu-Wanganui regions. Over 15% of the land area is in plantation forestry in the Bay of Plenty, Gisborne and Marlborough regions.

Figure 3. Share of agriculture and forestry in land use by regions, 2003



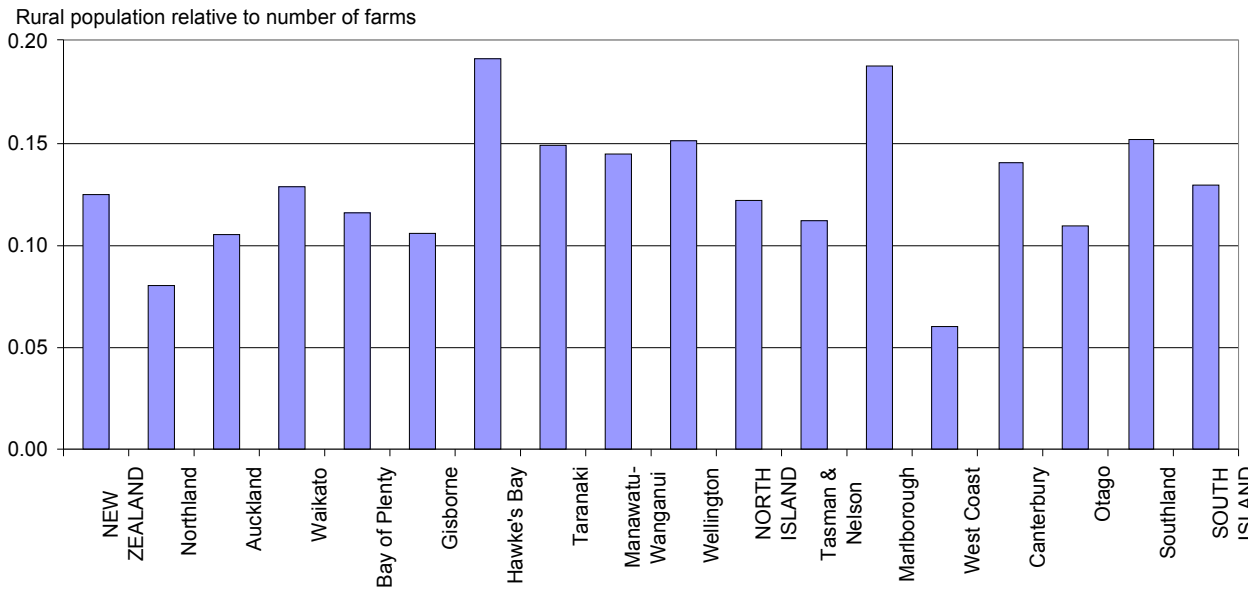
Note:

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

Source: Statistics New Zealand

9. Since the mid-1980s, the **land area** used for agricultural production has steadily declined. The area associated with livestock and arable farming has fallen from 14.4 million hectares in 1983-85 to around 11.7 million hectares in 2003-05, an annual decrease of almost 1 percent. A small amount of this land has gone into horticultural production, which has increased in land area by around 40 percent over the period although it still only comprises 1% of agricultural land area. 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.
10. The relative importance of farm households in the rural **population** can be indicated by dividing the number of farms by the rural population in a region (Figure 4). Farm households are an important part of the rural population in Hawke's Bay and Marlborough. While Northland and the West Coast have the largest share of regional population classified as rural, farm households are relatively less important in the rural population of these two regions. Alternatively, while the rural population is relatively small in the Wellington region, farm households appear to be relatively important.
11. In 2006 there were approximately 65,000 farms in New Zealand, down from just under 80,000 in 1986. Assuming that the average farm household comprises three members, family farm households would represent approximately one-third of the rural **population** in 2006 (approximately 5% of the total population). Assuming the same number of persons per household in 1986, the farm population would have represented one-half of the rural population at that time (approximately 7% of the total population).

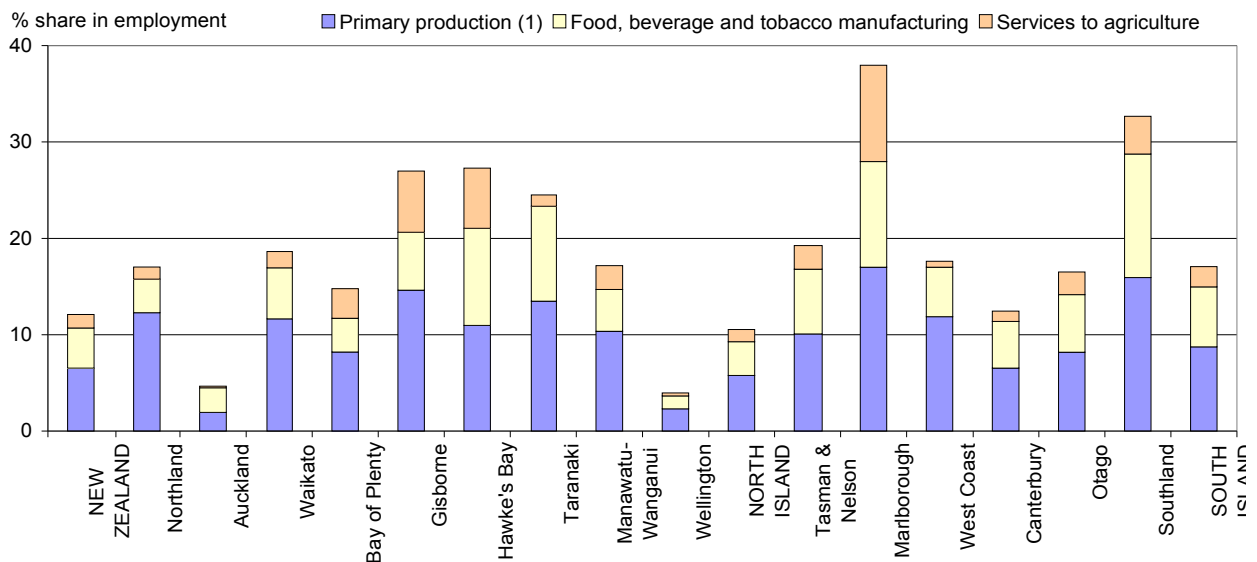
Figure 4. Relative importance of farm households in rural population by region, 2001



Source: Statistics New Zealand

12. 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 (Figure 5). Approximately 85% of these person, or just over 5% of the total, are employed on the farm. These three sectors accounted for more than 15% of employment in Marlborough and Southland. A further 5% of the national workforce is employed in food, beverage and tobacco manufacturing, which 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 Auckland. Services to agriculture represent 1% of national employment but over 5% of regional employment in Gisborne, Hawke's Bay and Marlborough.

Figure 5. Share of primary sector, food processing and services to agriculture in employment by region, 2006



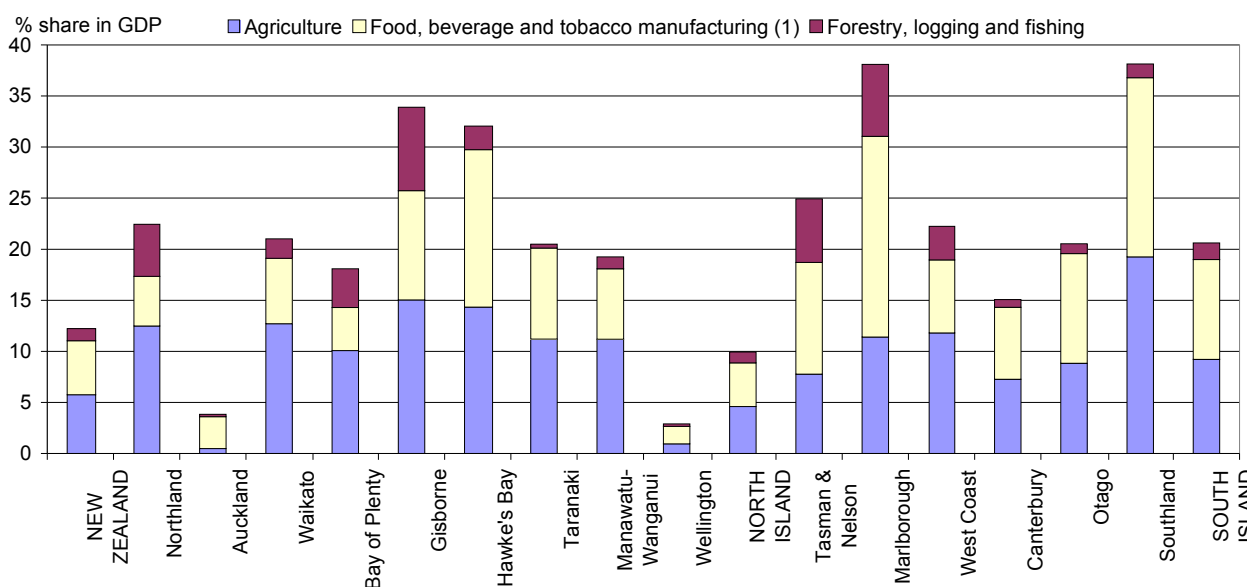
Note:

1. Primary production includes agriculture, forestry and fisheries.

Source: Statistics New Zealand

13. MAF estimate 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. 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.
14. 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 with the exception of Auckland and Wellington (Figure 6). 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. Downstream agricultural processing industries account for almost 20% of GDP in Marlborough, 17% in Southland, 15% in Hawke’s Bay, and just over 10% in Gisborne, Tasman and Nelson, and Otago.

Figure 6. Share of agriculture and agro-food industries in GDP by regions, 2003



Note:

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

Source: Statistics New Zealand Regional GDP Table

15. Since the mid-1980s, agriculture’s share of GDP has remained fairly stable at between 5-6%. 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. The relatively constant share of agriculture in GDP has occurred in the context of a rapidly growing transport and communications sector, and a decline in the area of land and the number of persons engaged in agricultural production. Agriculture has been able to maintain its relative importance in the economy as a result of a significant increase in farm productivity due to a number of factors including improved genetics, greater use of inputs such as nitrogen fertiliser and irrigation, and better management practices including pasture management.

Diversification of activities by farm households in rural areas

16. 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, olive, cut flowers, etc. The report focused on farm household diversification *away* from agricultural production, identifying two major forms: the development of on-farm, non-agricultural enterprises and off-farm employment. It concluded that these forms of diversification takes place on 30-50% of farms; are more likely to be undertaken by women; with it’s importance in household income varying from year to year depending on commodity prices.
17. In terms of alternative on-farm enterprises, the most obvious development has been 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. A 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. Other on-farm enterprises that have been developed include farm tourism (see next section), further processing of agricultural products, garment manufacturing, handicrafts, agricultural services and consultancy, journalism, etc.
18. 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. In the mid-2000s, off-farm income remains important. The 2007 Pastoral Monitoring report estimates a “national” dairy farm budget for 2006/07 within which off-farm income provided \$12,000 compared with a further net farm profit after tax of \$42,000. The importance of off-farm income was higher in the “national” sheep and beef farm budget, contributing \$17,000 with a net farm profit after tax of \$33,000. The report concluded that **off-farm income is now firmly a part of many sheep and beef farm businesses**. Analysis of the 2001 Census data found that those involved in the agricultural sector of the economy have the highest incidence of multiple job-holding. Research shows that multiple job holding amongst farmers has become established as a long-term feature of farm households.

Farm tourism in New Zealand

19. 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 snap shots of a wider tourism sector. A review of the literature indicates that there has been a significant growth over the past twenty years, with the number of farms involved in tourism rising from about 1,000 in the late 1980s to about 3,000 currently. Accommodation is the most common form of tourism services provided by farms, with a differentiation often made between “home hosting” (providing dinner, bed and breakfast) and “farm stays” (which involved more active observation of the farm). Self-contained accommodation facilities appear to be less common in New Zealand than in other countries such as the United Kingdom.
20. Day visits have also been developed as a commercial opportunity, often 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. In line with the expansion of the viticulture industry, wine tourism has developed significantly. Between 2001 and 2006, the number of international visitors to wineries rose from 108,000 to 225,000 persons, an annual increase of 16 percent. In 2001, 5.4% of all

international tourists visited a winery: by 2006 this had increased to 8.2%. International tourists represent 45 percent of wine visitors.

21. A further example is the development of private walkways offering trekking experiences, pioneered by the Banks Peninsula Track which opened on 1 December 1989. The 35 kilometre track passes through six farm properties plus Department of Conservation land, with accommodation provided by four landowners in farm buildings. The farms receive an income from the track fees (walkers are charged \$225 for the four-day option covering transport and accommodation) and are responsible for track maintenance. There are now 25 private walking tracks on farms around New Zealand, most located in coastal areas.
22. Research suggests a number of factors explaining the development of farm tourism.
 - It was initially driven in the 1970s by coordinating travel companies who persuaded both farmers into hosting and tourist operators into accepting farm stays on their programmes.
 - Following the removal of subsidies in the mid-1980s, farm tourism was seen as an option for providing *alternative income* – whether to ensure farm survival, obtain additional income for children’s education, etc – although it is not necessarily a big money earner for those involved.
 - The *social benefit* received by the hosts is almost always cited as an important motivation. Some point to the fact that middle-aged and older women dominate the management of farm stay businesses; others emphasis the ability of tourism to counteract isolationism; and others note that hosts are often themselves well travelled and enjoy the intellectual stimulation of meeting people.
 - In 1987, an *industry organisation*, the New Zealand Association of Farm & Home Hosts was established at the request of the New Zealand Tourism Board to give the increasingly popular and expanding hosted accommodation sector to a national voice and provide quality assurance.
 - During the early to mid 1990s, the *government played a facilitator role*, particularly through the MAF Rural Strategy Groups set up to identify opportunities and develop networks, and the publication of *Thinking of starting in rural tourism? A resource book* in 1994.
 - There has also been an increase in *demand* from both international and domestic tourists for farm tourism opportunities. With the days of being able to holiday on the farm of family or friends a thing of the past, an increasing number of New Zealand families are holidaying on farm stays.

Conclusions

23. From the study, a number of observations relating to the conference theme of examining how changes in rural land use can best be managed to achieve economic and environmental outcomes can be made. There are two main types of rural land use change occurring: a decrease in the area farmed and an increase in the intensity of production on remaining farm land. These changes create different environmental challenges - the first more in terms of landscape, the second in terms of pollution. While the latter may be more pressing, it can be rectified. It is more difficult, almost impossible, to reconvert pavement back into pasture (the economic cost of converting 4 ha lifestyle blocks into an economic farming unit would be astronomical).

24. Over the past twenty years there has been a significant increase in the pluriactivity of farm households, with a larger share of household income derived from non-agricultural sources, whether on-farm enterprises or off-farm employment. This increased interaction with the non-farming community has raised farmer awareness of environmental issues - making them more receptive. It also suggests that the costs associated with environmental management arising from policy interventions will be less as a share of overall farm household income than if one just looked at the income obtained from agriculture - making them more resilient. On the other hand, an alternative income source to offset costs may have an impact on the effectiveness of different policy instruments, e.g. it may be more economical to use alternative income to purchase carbon units rather than change production methods to decrease carbon emissions.

25. The income diversification examples illustrate that some farmers have developed enterprises that enable them to obtain an economic return from the provision of an “environmental service”. This is a positive development, indicating that such markets can be established and that the idea can quickly spread among land owners. However, the “environmental service” that can be provided will be very much depend on the location of the farm, and may require the development of networks, not only between farmers and potential purchasers but also between farmers themselves.