



# Rural Population and Farm Labour Change

Stéphanie Mulet-Marquis  
John R. Fairweather

Research Report No. 300  
March 2008



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**Stéphanie Mulet-Marquis  
John R. Fairweather**

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# Contents

<b>LIST OF TABLES .....</b>	<b>I</b>
<b>LIST OF FIGURES .....</b>	<b>III</b>
<b>LIST OF FIGURES .....</b>	<b>III</b>
<b>PREFACE .....</b>	<b>V</b>
<b>ACKNOWLEDGEMENTS.....</b>	<b>VII</b>
<b>SUMMARY.....</b>	<b>IX</b>
<b>CHAPTER 1 INTRODUCTION: LITERATURE REVIEW AND APPROACH.....</b>	<b>1</b>
<b>CHAPTER 2 CHANGE IN NEW ZEALAND RURAL POPULATION OVER TIME.....</b>	<b>3</b>
2.1 Classification and localisation of rural and urban areas.....	3
2.2 Distribution of population in rural and urban areas .....	6
2.3 Analysis of some characteristics of rural population .....	7
2.4 Projections.....	17
2.5 Regional population change .....	18
<b>CHAPTER 3 FARM LABOUR CHANGE OVER TIME .....</b>	<b>23</b>
3.1 Numbers of agriculture and fishery workers.....	23
3.2 Qualifications of the farm labour force .....	26
3.3 Proportion of the farm labour force belonging to different ethnic groups .....	26
3.4 Labour market dynamics in the agriculture, forestry and fishing sector.....	27
<b>CHAPTER 4 CONCLUSION .....</b>	<b>31</b>
<b>REFERENCES.....</b>	<b>33</b>



## List of Tables

Table 1: Change in regional population, 1991-2006.....	20
Table 2: Regional numbers of agricultural and fishery workers, 1996-2006.....	21
Table 3: Regional average age, 1991-2006.....	22





## List of Figures

Figure 1: Classification of New Zealand urban and rural areas .....	3
Figure 2: Urban and rural areas in the North Island, 2001 .....	4
Figure 3: Urban and rural areas in the South Island, 2001 .....	5
Figure 4: Numbers of people living in urban and rural areas, 1881-2006 .....	6
Figure 5: Proportion of people living in urban and rural areas, 1881-2006 .....	7
Figure 6: Difference in age structure of rural and urban populations, 2006 .....	8
Figure 7: Age pyramid of New Zealand total population, 2001 .....	9
Figure 9: Age pyramid of urban areas, 2001 .....	10
Figure 10: Age pyramid of rural areas with high urban influence, 2001 .....	10
Figure 11: Age pyramid of rural areas with low urban influence, 2001 .....	10
Figure 12: Age pyramid of rural areas with moderate urban influence, 2001 .....	11
Figure 13: Age pyramid of highly remote/rural areas, 2001 .....	11
Figure 14: Median age in rural and urban areas, 1976-2006 .....	12
Figure 15: Child-woman ratios, 1976 and 2001 .....	13
Figure 16: Age dependency ratios, 1976 and 2001 .....	13
Figure 17: Aged-child ratios, 1976 and 2001 .....	14
Figure 18: Birth rates by urban/rural profile areas, 1999-2003 .....	14
Figure 19: Net movements between and within rural and urban areas, 1991-2001 .....	16
Figure 20: Numbers of males per 100 females in urban/rural profile areas, 2001 .....	16
Figure 21: Sex-ratio in rural and urban areas, 1991-2001 .....	17
Figure 22: Projected resident population for rural areas, 2001-2021 .....	18
Figure 23: Map of New Zealand regions .....	19
Figure 24: Proportion of agriculture and fishery workers in total labour force, 1993-2006 .....	23
Figure 25: Numbers of agriculture and fishery workers, 1993-2006 .....	24
Figure 26: Numbers of agriculture and fishery workers affected by permanent and long-term migration, 1995-2006 .....	24
Figure 27: Proportion of agriculture and fishery workers by profile area, 2001 .....	25
Figure 28: Highest educational qualification of agriculture and fishery workers, 1996-2006 .....	26
Figure 29: Agriculture and fishery workers by ethnic group, 1996-2006 .....	27
Figure 30: Job and worker flows, 2000-2005 .....	28
Figure 31: Worker turnover rate, 2000-2005 .....	28
Figure 32: Average hourly earnings for those earning income from wage/salary jobs, 1999-2006 .....	29



## **Preface**

The AERU has published a number of reports on the New Zealand rural population and agricultural sector change over time. The present report collects a range of indicators that point out some of the characteristics of rural New Zealand and their change in the course of time. It is hoped that this review will be useful to those with a general interest in rural society by gathering in one document data from different sources concerning rural population and farm labour change.

**Professor Caroline Saunders**  
**Director**  
**AERU**



## **Acknowledgements**

The authors would like to acknowledge the help of Marieke Boleyn from Statistics New Zealand who provided precious information and data from the 2006 Census of Population and Dwellings.



## Summary

The first part of this report examines some changes in New Zealand rural population since 1881 and more recent demographic characteristics. It shows that during the twentieth century, the proportion of people living in rural areas has dramatically decreased. The rural population has kept some distinctive characteristics and it differs from the urban population notably by having a higher proportion of children and a lower proportion of young adults and elderly people. Employment opportunities in urban areas and better availability of care facilities for older people can be considered as the main factors attracting people in these age categories away from rural areas. It has to be noted that at the same time, rural areas are also attracting important numbers of new inhabitants, which can probably be explained by the growing popularity of lifestyle blocks.

The second part of the report concerns farm labour change. While the absolute numbers of agriculture and fishery workers in New Zealand have not followed an overall trend of decrease, their proportion in total labour force has been falling over the last decades. The profile of agricultural workers has also undergone changes, with notably an increase in highly qualified workers and a decrease in the numbers of workers with no qualification. Just like in the national population, changes have been observed as well in the ethnic composition of the farm labour force over time. To conclude, some elements concerning the labour market dynamics are examined. These show that the agricultural sector has the highest worker turnover rate, while the average hourly earnings in this industry remain less than the average in the total population.





# Chapter 1

## Introduction: Literature Review and Approach

The study of New Zealand rural population and farm labour change has been addressed by numerous authors during the second half of the twentieth century and the beginning of the twenty-first century. Thus, the subject of depopulation in some rural regions – raising the question of the viability of rural communities – has been of some concern since as early as the 1950s, while the more recent development of lifestylers and commuters have raised the question of the change in social characteristics and traditional rural values in other rural areas.

This report aims at gathering data from different sources concerning New Zealand rural population and farm labour change, and at providing an update of some earlier research on these topics. Various articles released during the second half of the twentieth century that described rural population characteristics at different periods have been used. Among them, several articles aimed at explaining the movement from rural to urban areas observed in New Zealand and highlighting its consequences on rural population. *Population Movement from Country to Towns* (New Zealand Journal of Agriculture no.85, 1952) by D.A. Viggers proposed hypotheses about the reasons for the dramatic increase in the proportion of the urban population during the first part of the twentieth century, mainly attributing it to changing farming systems and decreasing rural employment opportunities. Another article that examined rural population change and tried to explain the movement from rural to urban areas was *Rural Depopulation and Resettlement* (1980), by W.H. Barker and H.J. Brown, that highlighted ‘push’ and ‘pull’ factors and consequences of rural depopulation. *Contemporary New Zealand - Rural Population Trends* (New Zealand Agricultural Science, February 1980) by L.D.B. Heenan considered the story of post-war population growth in New Zealand rural areas and described rural demographic trends in terms of polarized change rather than population decline, and rural planning problems raised by this redistribution. *People and Planning in Rural Communities* (1980) by G. Cant examined more precisely the change in rural population from 1971 and assessed the link between viability of farming and viability of small townships, as well as the contribution of lifestylers and part-time farmers to rural development. *A Profile of Rural New Zealand* (Country Living, Summer 1991), drawn from the 1991 ‘Public Policy and Rural Communities’ report to MAF (Webber and Rivers), gave an overview of the long-term change in rural New Zealand profile over a wider period – between 1850 and 1990. Their article described three main periods, the first one (1850 to 1911) when agriculture was dominated by a relatively small - but politically and socially dominant - group of farmers operating large pastoral runs, the second one (1911 to 1961) marked by a growing importance of urban areas and a decline in the numbers of people employed in agriculture, and the third one – until 1991 – when the rural sector continued to have an important role in New Zealand, but was affected by substantial change.

Other articles that have been used for this report focussed more precisely on some demographic indicators. Thus, *Age Profiles and Village Populations in New Zealand* (New Zealand Agricultural Science, August 1981) by W. Neville examined the age composition of the rural population mainly using the 1976 Census of Population and provided some age indicators that could be compared to more recent figures. Some demographic data about rural population over the same period were also provided in *New Zealand Rural Society in the 1970s* (Studies in rural change No 1, 1979, R. Bedford, A. Gillies, B. Heenan, H.Little, E. Stokes). MAF Technical

Paper *New Zealand Rural Diversity (Part one: a 1986 profile and Part two: Rural change 1986-1991)* provided figures concerning various demographic indicators during more recent years. The ‘*long-term data series*’ provided by Statistics New Zealand were also helpful to describe the change in some particular indicators over time.

Concerning the more recent trends, we mainly used the results of the last Census of Population and Dwelling, as well as the Agricultural Production Statistics, both released by Statistics New Zealand. A particularly useful document has also been ‘*New Zealand: an Urban/Rural Profile*’ released by Statistics New Zealand in 2005, that provided a new classification enabling a distinction between the different types of rural areas in New Zealand, and explored the diversity of the social and economic characteristics of people living in these areas. Those various sources, as well as Statistics New Zealand *Labour Market Statistics* (2006), also provided most of the data on farm labour presented in the third part of the report.

This report is based on selective parts of these various studies that seemed relevant to describe some of the characteristics of New Zealand rural population at different periods of time, and linked them to more recent data available so as to examine the changes that occurred over time. The account provided is largely descriptive although, where possible, some discussion and interpretation of the results is given. It is hoped that a descriptive account of urban and rural population change and farm labour change will be useful to those with a general interest in rural society and monitoring changes in some key characteristics over time.

The main difficulty in achieving this update has been the change in the definitions used in the different censuses and statistical surveys produced in the past, particularly as the definitions of rural and urban areas, as well as that of agricultural labour force have been modified between the different censuses. Furthermore the classification mentioned above that described different types of rural areas did not exist before 2001, which prevented us from using it for the examination of long-term trends.

The second chapter of this report explores the theme of rural population change over time, and the third one then presents some of the changes in farm labour that occurred over the last decades.

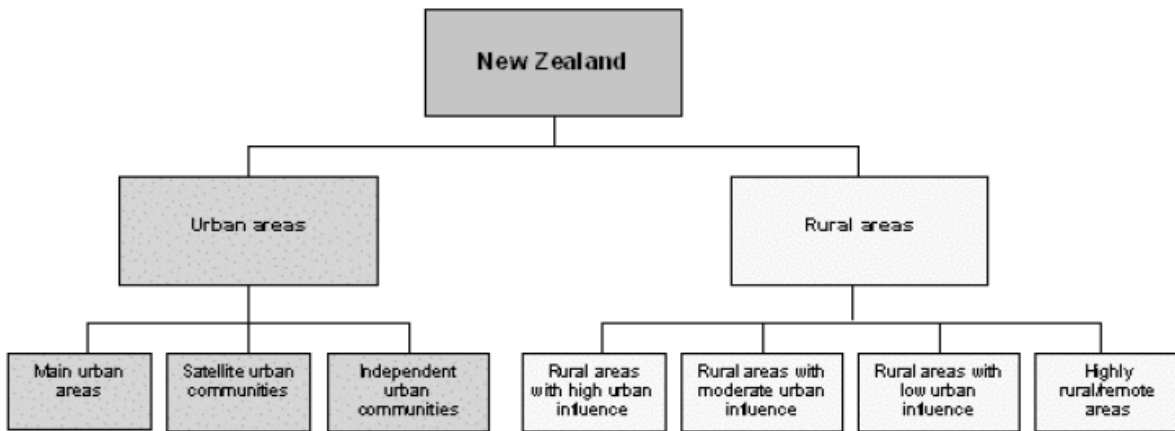
# Chapter 2

## Change in New Zealand Rural Population Over Time

### 2.1 Classification and localisation of rural and urban areas

Since 2001, Statistics New Zealand has developed a new classification for urban and rural areas, based on a comparison of a person's usual residential address with their workplace address, using data from the Census of Population and Dwellings. Rural areas, instead of being treated as the residual category of urban areas, are separately classified according to the varying influence of nearby urban areas. However, the majority of statistical data recorded previously have not been updated to match this classification. Thus, these different rural and urban categories will not be used here when studying change in the long term, but only for study of differences within rural areas at present. Figure 1 shows the different categories of urban and rural areas.

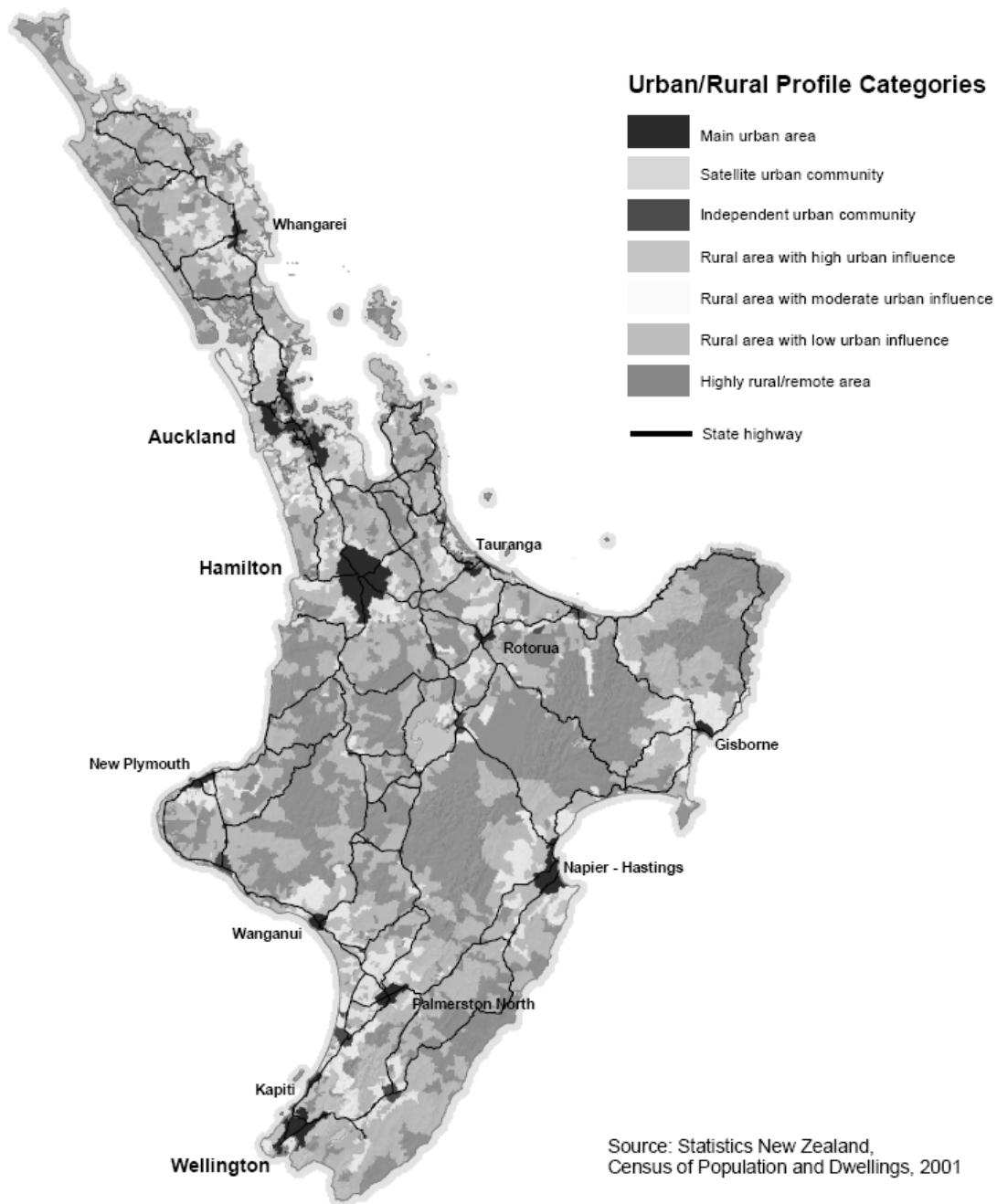
Figure 1: Classification of New Zealand urban and rural areas



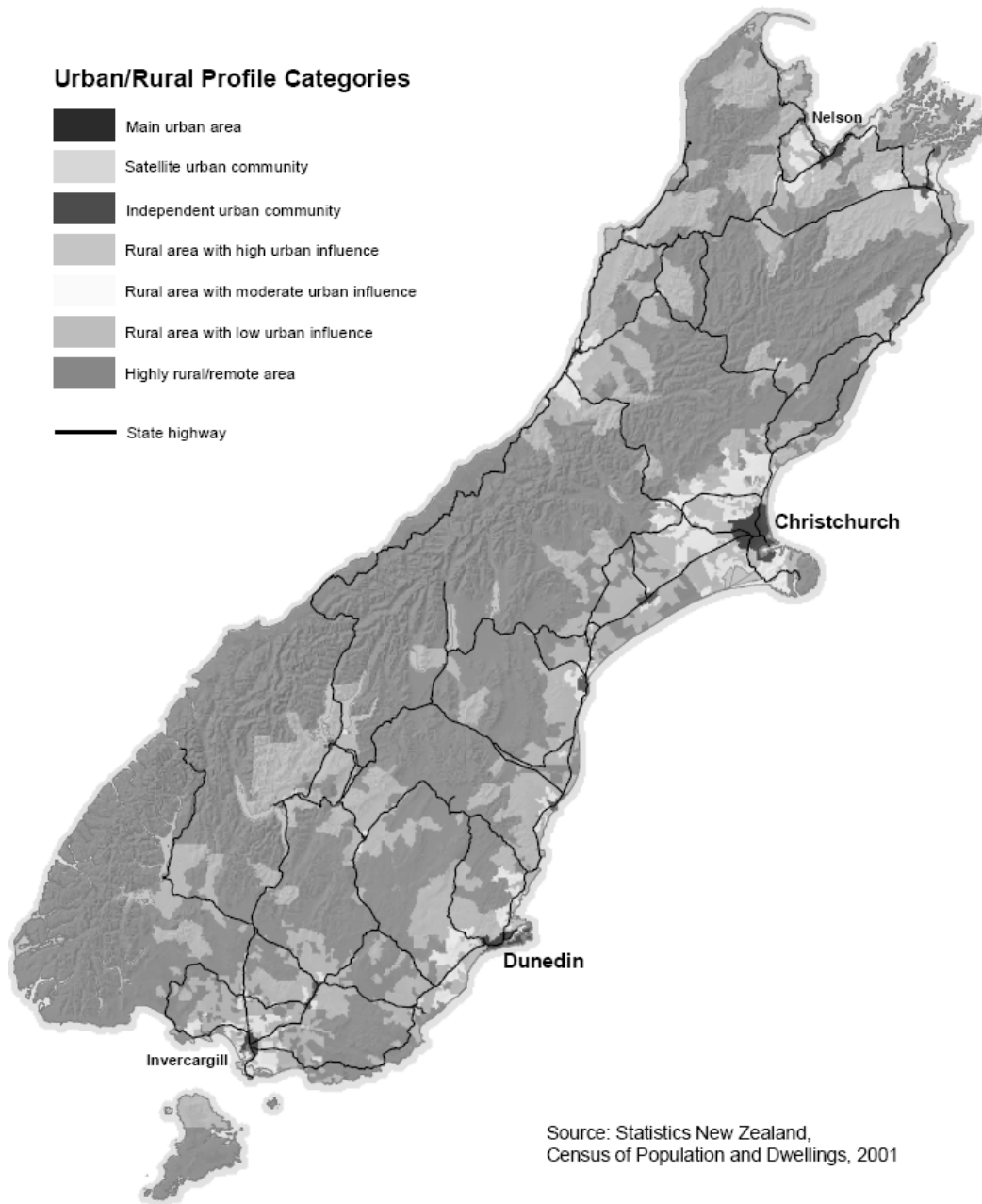
Source: Statistics New Zealand, *New Zealand: an Urban/Rural Profile*, (<http://www.stats.govt.nz/NR/rdonlyres/A2FDF8E9-32AD-487D-AEE7-040F513EE777/0/NZUrbanRuralProfile2.pdf>)

These different areas are located on the maps shown in Figure 2 and Figure 3 below:

**Figure 2: Urban and rural areas in the North Island, 2001**



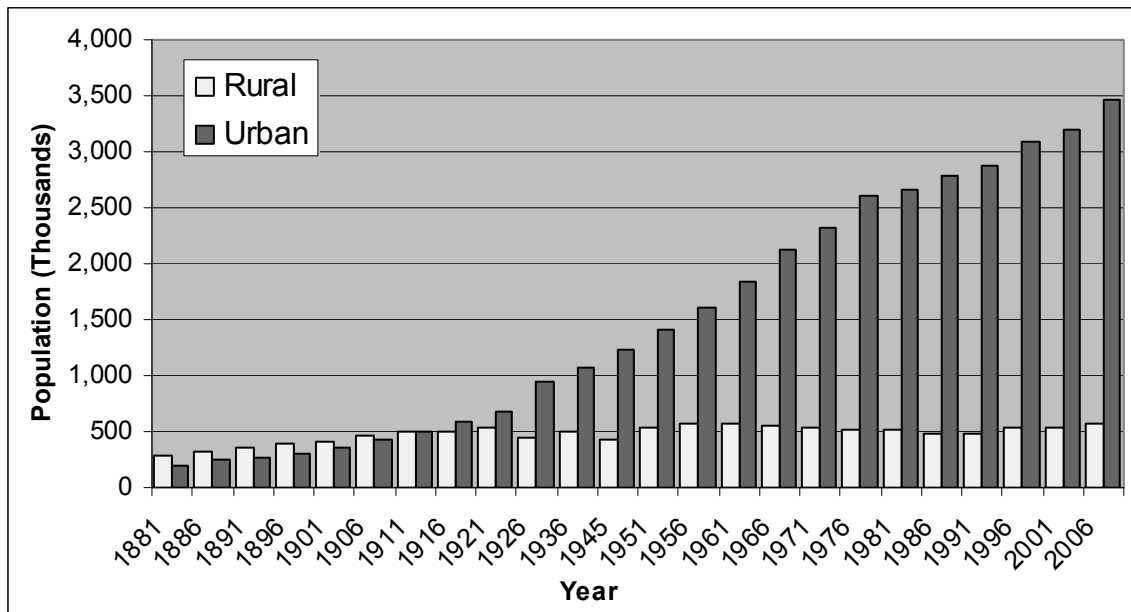
**Figure 3: Urban and rural areas in the South Island, 2001**



## 2.2 Distribution of population in rural and urban areas

Between the end of the nineteenth century and the beginning of the twenty-first century, the balance of New Zealand population moved from rural to urban areas. In the beginning of the 1900s the majority of the population was still living in rural areas, but urban population then dramatically increased during all the twentieth century (at an average growth rate of 14 per cent per year) while rural population remained almost constant, with an average growth rate of only two per cent per year. Thus, as indicated in Figure 4, between 1881 and 2006, the population of urban New Zealand increased by over 1,675 per cent (that is an increase of 3,268,200 inhabitants), compared with an increase of 94 per cent (273,500 people) in rural areas.

**Figure 4: Numbers of people living in urban and rural areas, 1881-2006**

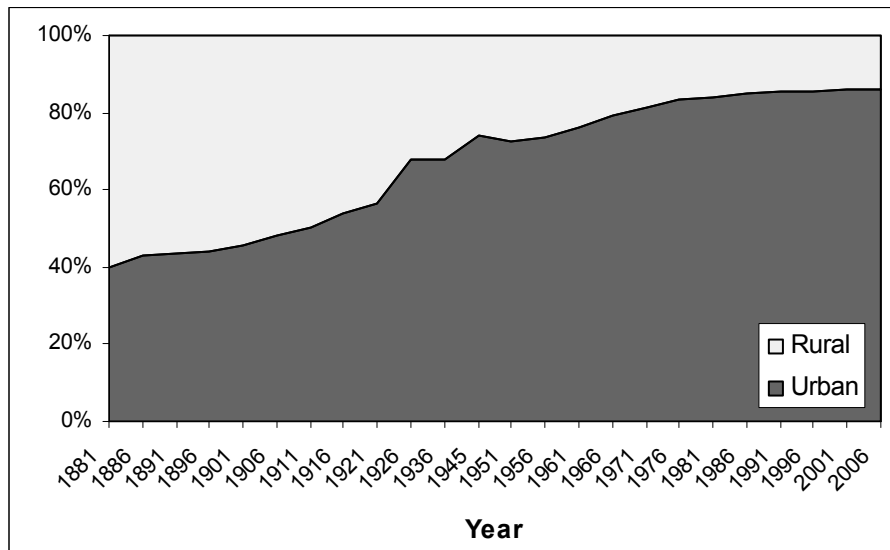


Source: Statistics New Zealand ([http://www.stats.govt.nz/NR/rdonlyres/E8A79EF9-0D0E-4CFB-AC7E-DC49FF6D442F/0/A\\_1\\_2\\_Rural\\_and\\_Urban\\_Population.xls](http://www.stats.govt.nz/NR/rdonlyres/E8A79EF9-0D0E-4CFB-AC7E-DC49FF6D442F/0/A_1_2_Rural_and_Urban_Population.xls)).

Note: Population measures: Census Night until 1986, and then Census Usually Resident.

These distinct trends in rural and urban population sizes can be observed in the relative proportions of rural and urban inhabitants too. As Figure 5 suggests, it is possible to distinguish three main trends over time. The first one, between 1886 and 1901, consists in an increase of about one per cent per year in the people living in urban areas. This is followed by a period of faster increase (about two per cent per year) between 1901 and 1976, which is interrupted by a few years of irregular growth probably linked to the impact of World War II. Then, during the last decades, the proportion of urban inhabitants has almost reached a plateau, with only a slight increase of less than 0.5 per cent per year.

**Figure 5: Proportion of people living in urban and rural areas, 1881-2006**



Source: Statistics New Zealand ([http://www.stats.govt.nz/NR/rdonlyres/E8A79EF9-0D0E-4CFB-AC7E-DC49FF6D442F/0/A\\_1\\_2\\_Rural\\_and\\_Urban\\_Population.xls](http://www.stats.govt.nz/NR/rdonlyres/E8A79EF9-0D0E-4CFB-AC7E-DC49FF6D442F/0/A_1_2_Rural_and_Urban_Population.xls)).

Note: Population measures: Census Night until 1986, and then Census Usually Resident.

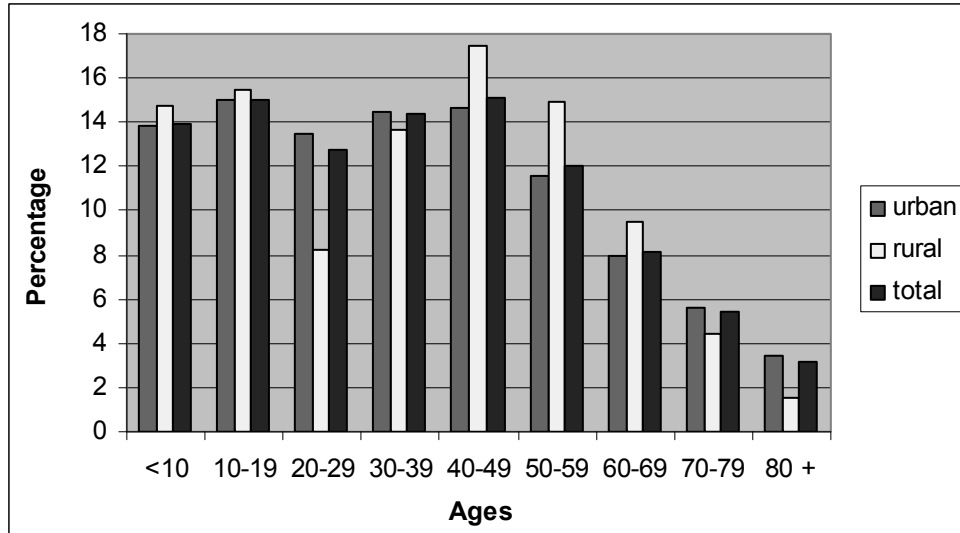
## **2.3 Analysis of some characteristics of rural population**

Notable differences exist between populations of rural and urban areas, as well as between the populations of the different types of rural areas. In particular, the age profiles of these populations and their sex-ratio show substantial differences. This part first presents different types of data, each illustrated by a figure, and then aims at identifying links between these data and at explaining the pattern observed.

### **2.3.1 Age profiles**

Figure 6 illustrates the difference in age structure between rural and urban populations in 2006. Rural areas have a higher part of their population in the 0-20 year old and the 40-69 year old age categories, while the proportion of people in all the other age categories is higher for urban areas. The main differences concern the young adult category (20-29 year old) and the older one (80 years and over). It can be noted that as the majority of New Zealanders live in urban areas, the figures for national population reflect the urban figures.

**Figure 6: Difference in age structure of rural and urban populations, 2006**

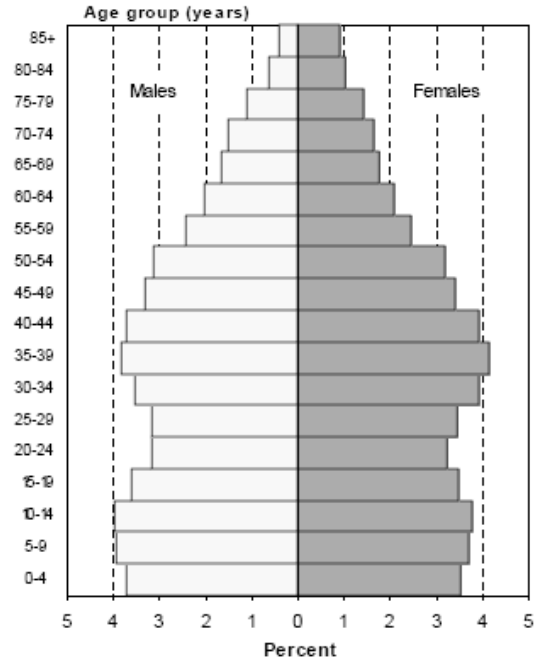


Source: 2006 Census of Population and Dwellings.

More precise results can be drawn from the examination of each type of rural area. Thus, the age pyramids of New Zealand population as a whole, as well of that of rural and urban areas, and that of each type of rural and urban areas are represented below in Figure 7 to Figure 13 for the year 2001 (breakdowns by Urban/Rural profile categories are not available for more recent years). Statistics New Zealand provided the most recent data presented in Figure 6 on a ten year intervals basis, while the age pyramids are based on five year intervals. It can be noted on Figure 7 that New Zealand total population age pyramid presents a deficit of people in the 15-29 age categories. This could be due to a migration factor, as people deciding to live overseas either in a short-term or a long-term migration pattern are likely to belong to these age categories (for example, more than a third of all New Zealanders that left the country in 2006 were between 15 and 29 year old).

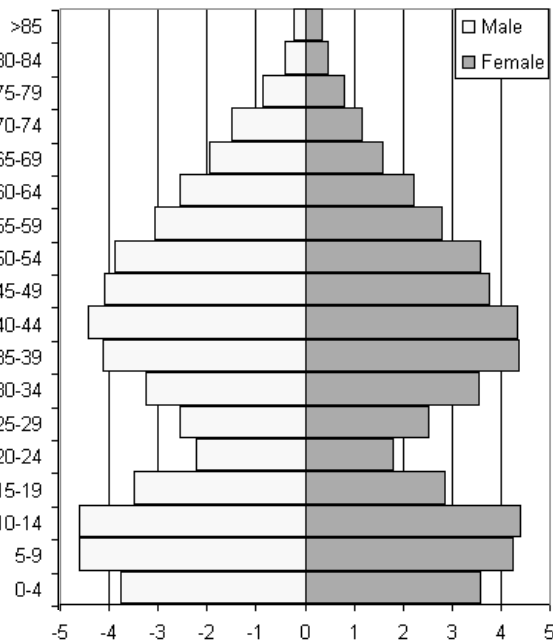


**Figure 7: Age pyramid of New Zealand total population, 2001**



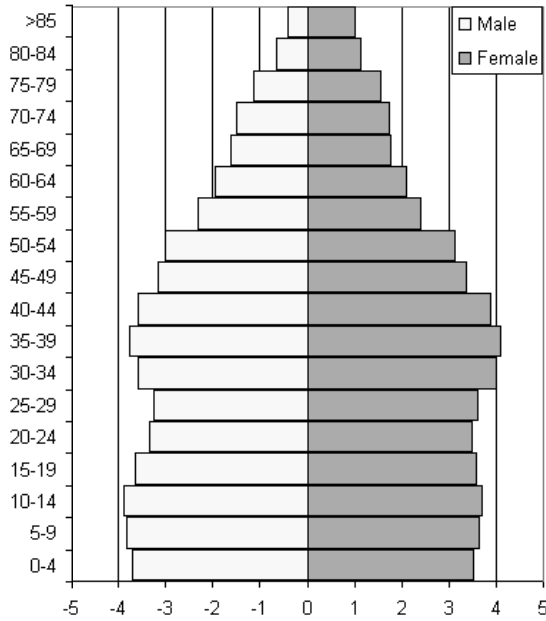
Source: Statistics New Zealand, *New Zealand: an Urban/Rural Profile* (<http://www.stats.govt.nz/NR/rdonlyres/A2FDF8E9-32AD-487D-AEE7-040F513EE777/0/NZUrbanRuralProfile2.pdf>)

**Figure 8: Age pyramid of rural areas, 2001**



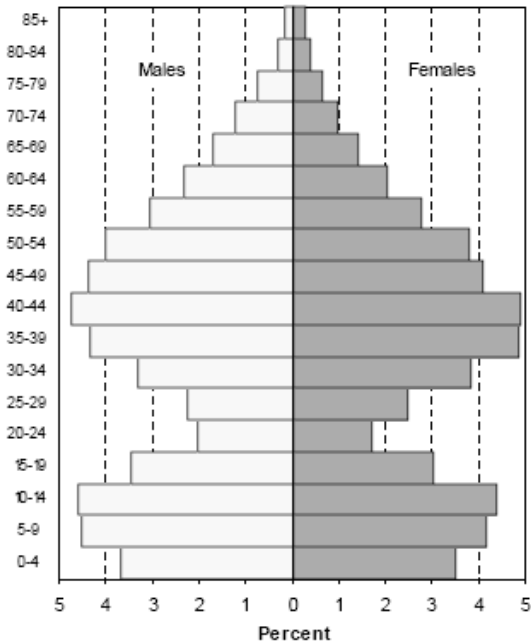
Source: Statistics New Zealand.

**Figure 9: Age pyramid of urban areas, 2001**

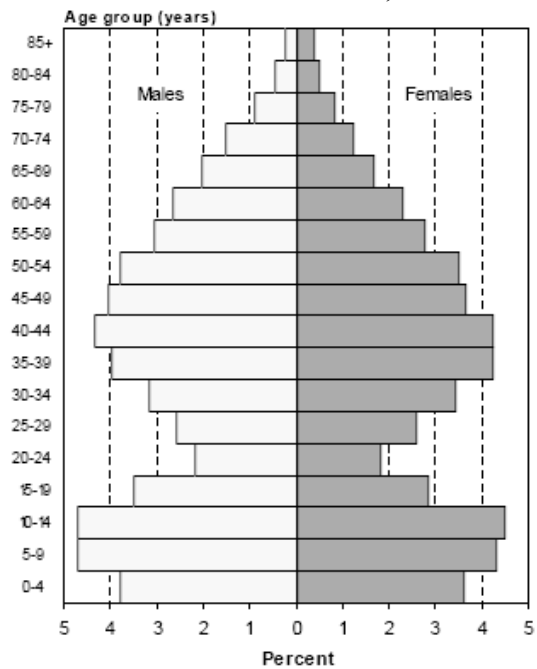


Source: Statistics New Zealand.

**Figure 10: Age pyramid of rural areas with high urban influence, 2001**

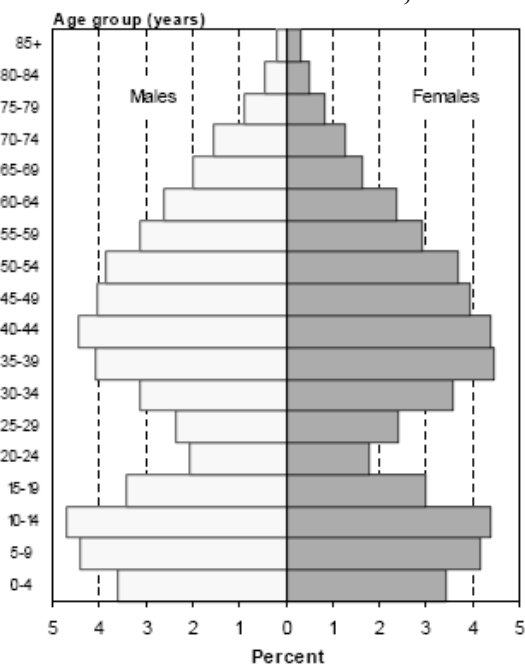


**Figure 11: Age pyramid of rural areas with low urban influence, 2001**

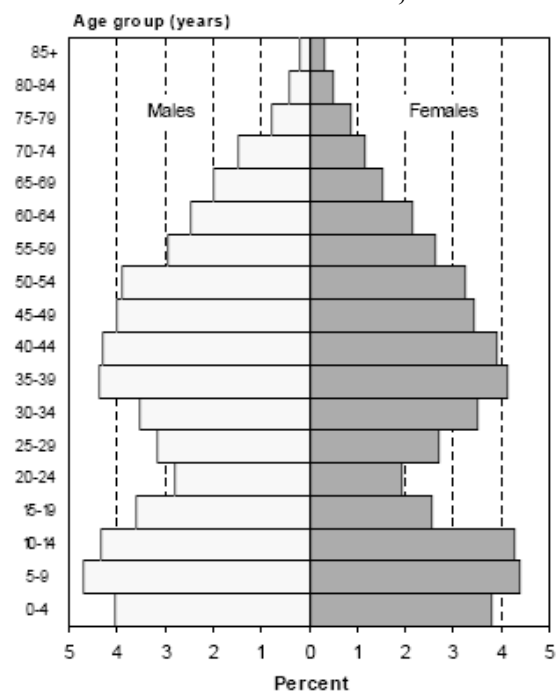


Source: Statistics New Zealand, *New Zealand: an Urban/Rural Profile* (<http://www.stats.govt.nz/NR/rdonlyres/A2FDF8E9-32AD-487D-AEE7-040F513EE777/0/NZUrbanRuralProfile2.pdf>)

**Figure 12: Age pyramid of rural areas with moderate urban influence, 2001**



**Figure 13: Age pyramid of highly remote/rural areas, 2001**



Source: Statistics New Zealand, *New Zealand: an Urban/Rural Profile* (<http://www.stats.govt.nz/NR/rdonlyres/A2FDF8E9-32AD-487D-AEE7-040F513EE777/0/NZUrbanRuralProfile2.pdf>)

These age pyramids underline the same main differences mentioned above between rural population and that of New Zealand as a whole. They confirm the fact that all the categories of rural population have a larger proportion of children than that of New Zealand population as a whole. Thus the total proportion of children (males and females) from five to 14 is around 18 per cent in all rural areas, compared to 15.4 per cent nationally.

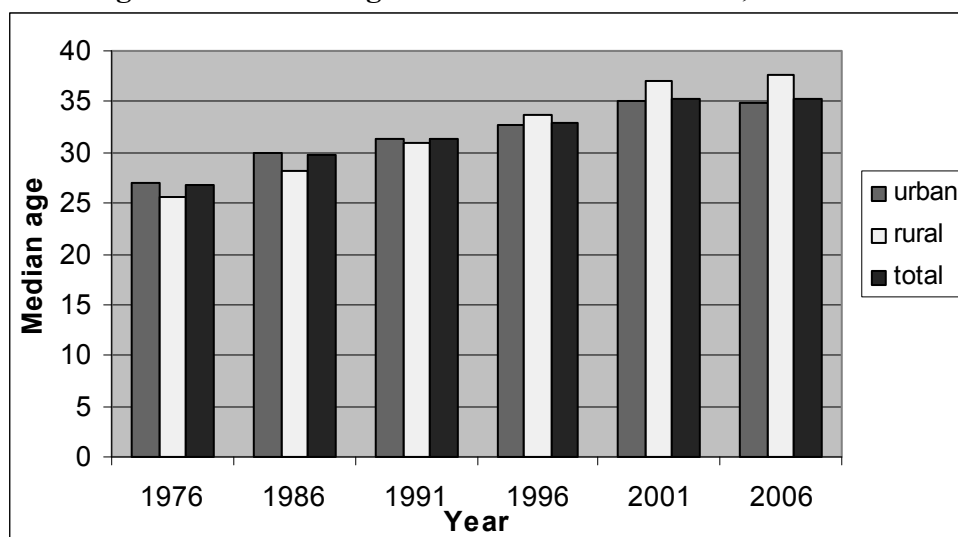
Rural populations also tend to have a relative deficit for both sexes among people from 15 to 34, with a proportion of people in this age category varying from 22 to 24 per cent depending on the rural area, compared to more than 27 per cent in New Zealand as a whole. The pyramids also show a greater proportion of males between 35 and 69, who represent about 24 per cent of the different rural area populations, and only 20 per cent of the country's population. This greater proportion is less obvious for females of the same age, except in areas with moderate and high urban influence that also have a large part of their female population in the 35-69 age category.

The proportion of people of 70 and over is less important in all the rural areas than in New Zealand total population, especially for females that present a very marked deficit at ages over 70. Thus, females over 70 represent less than three per cent of the population in each type of rural area, compared to five per cent of New Zealand population as a whole.

Other indicators can also give an idea of the age composition of rural population and allow us to make comparisons over time. Four of them are presented here: the median age, the child-woman ratio, the age-dependency ratio, and the aged-child ratio. These indicators had been provided and described by W. Neville for the year 1976 in *Age profiles and village populations in New Zealand* (New Zealand Agricultural Science, August 1981), and more recent figures (in particular results from the 2001 and 2006 Census of Population provided by Statistics New Zealand) were used to calculate these ratios for following years and assess the change that occurred meanwhile.

Median age. This indicator at six different years between 1976 and 2006 is represented in Figure 14. In 1976, the rural median age was 1.2 years below the urban median age. However, median age in rural areas then rose by 12 years during the period from 1976 to 2006, compared with a rise of only eight years in urban areas: rural population has been ageing faster than urban population. As a result, by 2006, rural areas had a higher median age, exceeding that of urban areas by 2.7 years.

**Figure 14: Median age in rural and urban areas, 1976-2006**

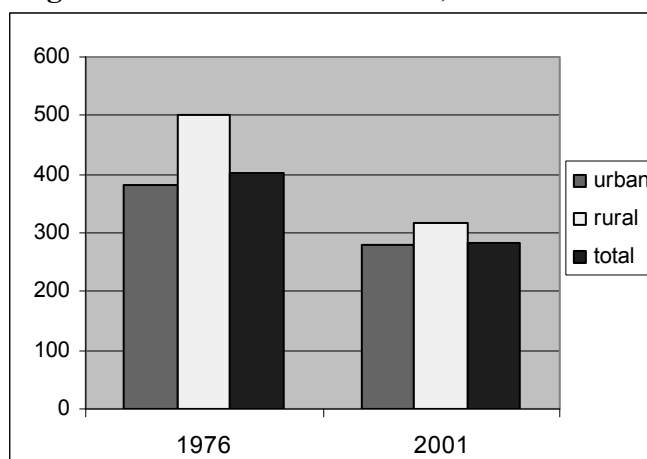


Source: W. Neville (*Age profiles and village populations in New Zealand*) for the year 1976, Statistics New Zealand (*People and Places*, <http://www2.stats.govt.nz/domino/external/PASFull/pasfull.nsf/173371ce38d7627b4c25680900046f25/4c2567ef00247c6acc256b03000936c4/%24FILE/PEOPLEAN.PDF> for 1986, 1991, 1996), and Census of population for the years 2001 and 2006.

Child-Woman ratios. (Total population 0-4 years / Females 15-49 years) x 1000.

The Child-Woman ratio provides clarification of the importance of children in determining the median age. The numbers of children per 1,000 females between 15 and 49 years old decreased over the past decades both in rural and urban population, but in 2001 it remained higher in rural areas than in urban ones, as illustrated in Figure 15. This ratio is not represented for 2006, as the data for this year were not available in the same age ranges to allow easy comparisons.

**Figure 15: Child-woman ratios, 1976 and 2001**

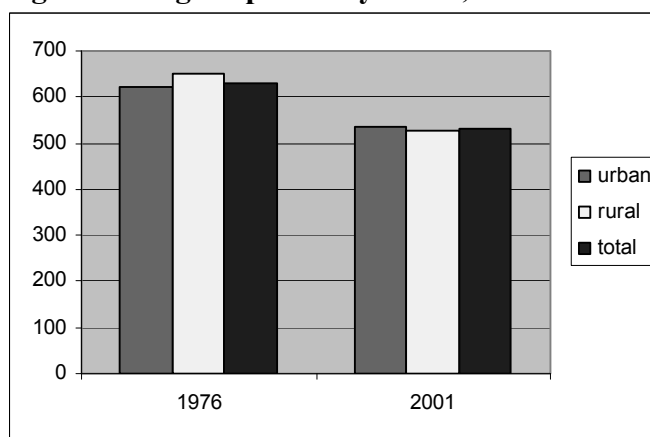


Source: 2001 Census of population for the year 2001, and W. Neville (*Age profiles and village populations in New Zealand*) for the year 1976.

Age-dependency ratios. (Total population 0-14 years and 65 years and over / Total population 15-64 years) x 1000.

The age-dependency ratio measures the relationship between people of working age and those who, in age rather than actual terms, are dependent on them. Figure 16 shows that while rural areas tended to carry a significantly heavier dependent population in 1976, by 2001 their age-dependency ratio had become slightly inferior to that of urban areas.

**Figure 16: Age dependency ratios, 1976 and 2001**

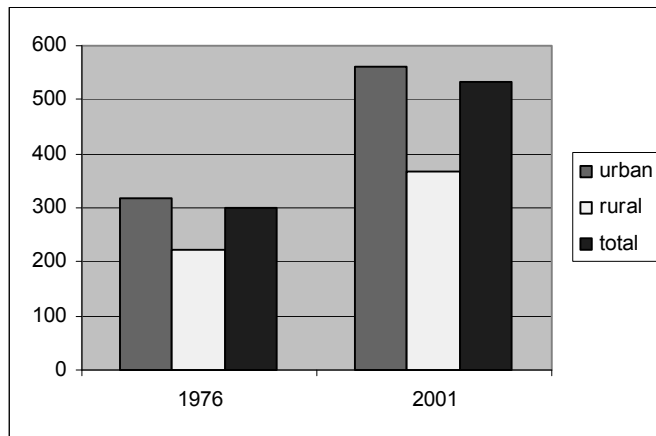


Source: 2001 Census of population for the year 2001, and W. Neville (*Age profiles and village populations in New Zealand*) for the year 1976.

Aged-child ratios. (Total population 65 years and over / Total population 0-14 years) x 1000.

The aged-child ratio gives a measure of the component of the dependency categories in relation to each other. As the age pyramids indicated, the dependency part of the population are of a different nature in rural and urban areas, with a larger proportion of children and a relative deficit in aged people in rural areas, and Figure 17 shows that this imbalance has been increasing over recent decades.

**Figure 17: Aged-child ratios, 1976 and 2001**

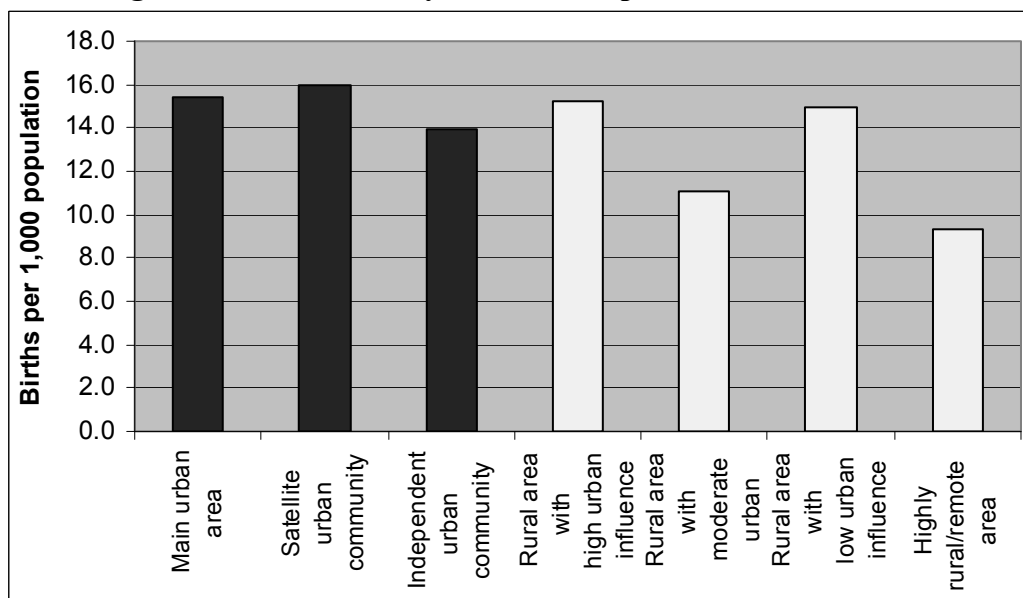


Source: 2001 Census of population for the year 2001, and W. Neville (*Age profiles and village populations in New Zealand*) for the year 1976.

Thus, significant differences exist in the demographic aspects of rural and urban areas. What hypotheses can be made to explain these differences?

While the high proportion of children in rural areas could be explained by higher birth rates in the past (source: W Neville, 1981, *Age profiles and village populations in New Zealand*), it no longer seems to be the case. Indeed birth rates are no longer higher in rural areas than in urban ones as Figure 18 shows. Thus, the high proportion of children might rather be caused by a movement of people of child-rearing ages to rural areas than by a natural increase factor.

**Figure 18: Birth rates by urban/rural profile areas, 1999-2003**



Source: Statistics New Zealand, *New Zealand: an Urban/Rural Profile* (<http://www.stats.govt.nz/NR/rdonlyres/A2FDF8E9-32AD-487D-AEE7-040F513EE777/0/NZUrbanRuralProfile2.pdf>)

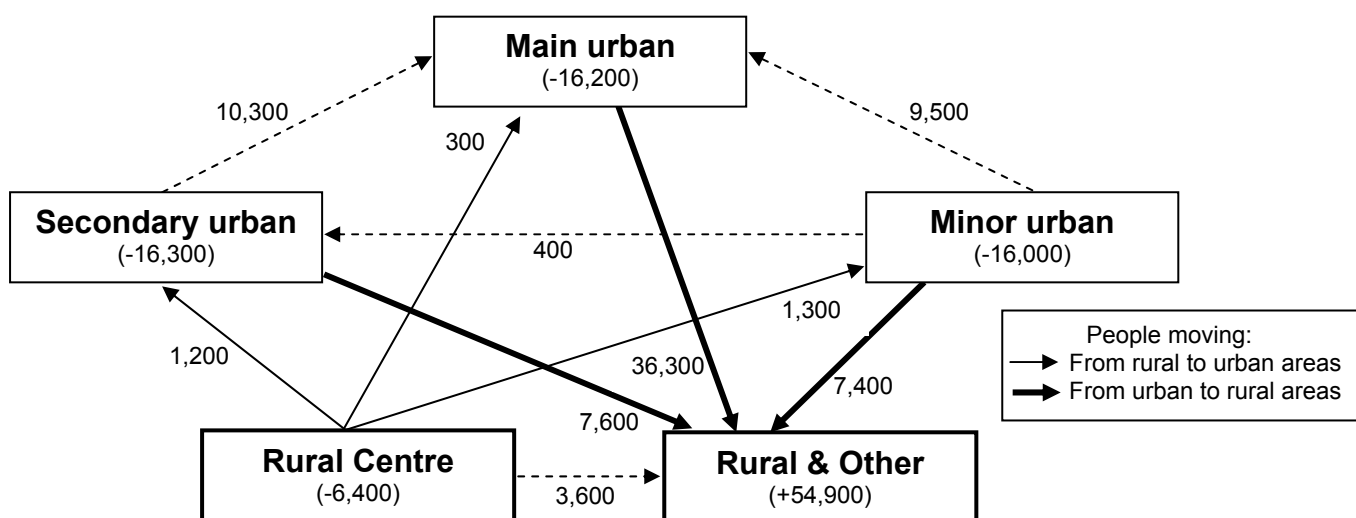
The relative deficit for both sexes at young adult ages can probably be linked to tertiary education and alternative employment opportunities that attract young people away from rural areas, at least temporarily. The deficits are even greater for the female population, which may be attributable to differing employment opportunities for women in rural and urban areas, as many traditional areas of rural employment are still dominated by men.

Age pyramids for rural regions then tend to become closer to the total population distribution with an increase in the proportions of both men and women of adult ages (not necessarily attributable to the same people returning to the rural areas they had left earlier). This is especially true for rural areas with high urban influence that had the highest working-age population (15-64 years) of any profile area at the 2001 Census, and for the rural areas with moderate urban influence that had a slightly higher than average working-age population. The popularity of these areas for these age categories can be explained by the fact they offer the possibility of enjoying a rural lifestyle and the close proximity of urban amenities in the same time.

Women over 70, and in lower proportions men in the same age category, represent a smaller part of the population in rural areas than in urban ones. This can be explained by the fact people tend to move into urban localities at older ages, mainly due to the better availability of care facilities in these localities.

The net movements between and within rural and urban areas between 1991 and 2001 are schematized in Figure 19. During this period, more than 48,000 more people chose to live in rural areas than decided to leave, result of a net growth of 54,900 inhabitants in 'other rural' areas reduced by a net loss of 6,400 inhabitants in rural centres. The main factor influencing the destinations of these new rural dwellers was probably the growing popularity of lifestyle blocks, particularly in the proximity of urban areas where daily commuting is possible. This could also explain why rural centres have had a net loss of people, as the attraction of the rural lifestyle rather draws people to lifestyle blocks close to main urban areas rather than to independent rural towns.

**Figure 19: Net movements between and within rural and urban areas, 1991-2001**

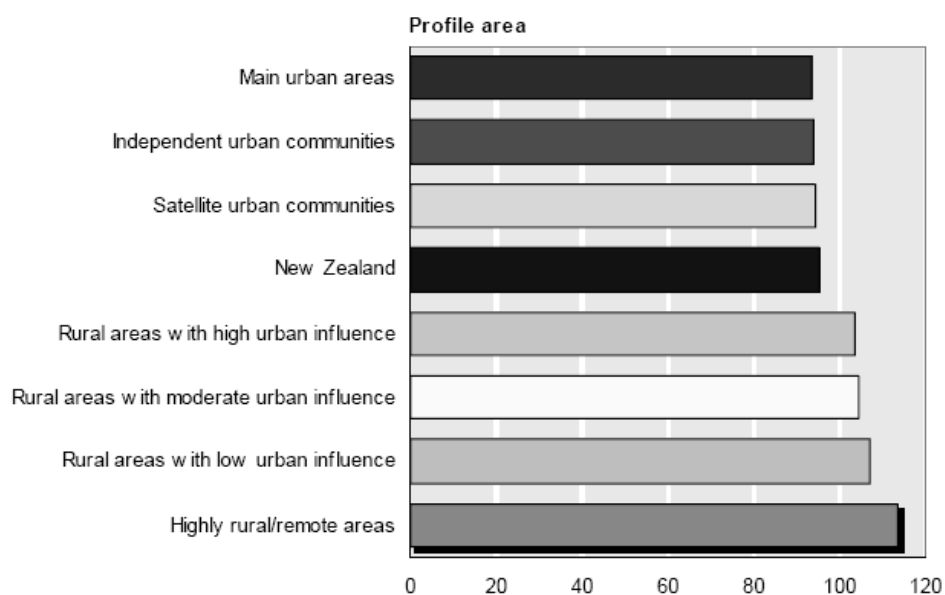


Source: Statistics New Zealand (<http://www.stats.govt.nz/analytical-reports/tourism-migration-2000/tourism-and-migration-internal.htm> for the movements between 1991 and 1996, and <http://www2.stats.govt.nz/domino/external/pasfull/pasfull.nsf/00c9e0a06fee31764c2568470008f782/4c2567ef00247c6acc256c680006a307?OpenDocument> between 1996 and 2001)

### 2.3.2 Sex ratio

The contrast noticed between the proportions of males and females in urban and rural areas through the different ages is confirmed by the difference in sex ratio. Figure 20 represents the situation in 2001 and indicates that rural areas have more males than females, while it is the opposite for urban area (and therefore for New Zealand as a whole).

**Figure 20: Numbers of males per 100 females in urban/rural profile areas, 2001**

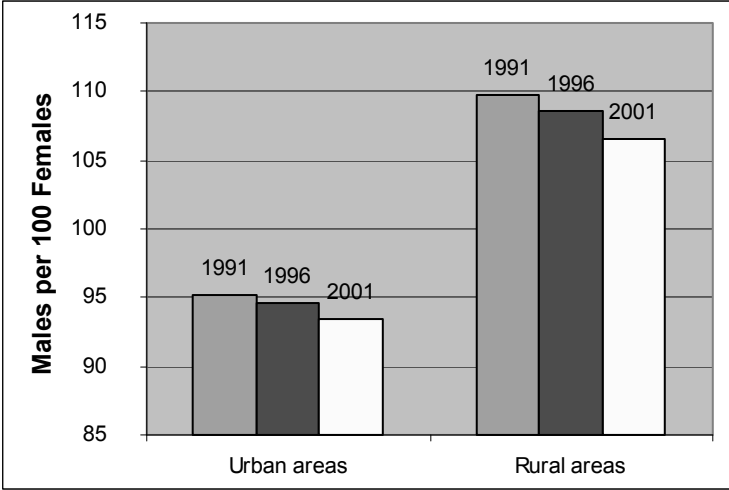


Source: Statistics New Zealand, *New Zealand: an Urban/Rural Profile* (<http://www.stats.govt.nz/NR/rdonlyres/A2FDF8E9-32AD-487D-AEE7-040F513EE777/0/NZUrbanRuralProfile2.pdf>)



However, even though rural areas maintain higher male numbers, this phenomenon has become less obvious over the last decade, with a decrease in the sex ratio in all urban and rural areas during this period. Figure 21 allows a comparison between the situation in 2001 and what was recorded in 1991 and 1996.

**Figure 21: Sex-ratio in rural and urban areas, 1991-2001**



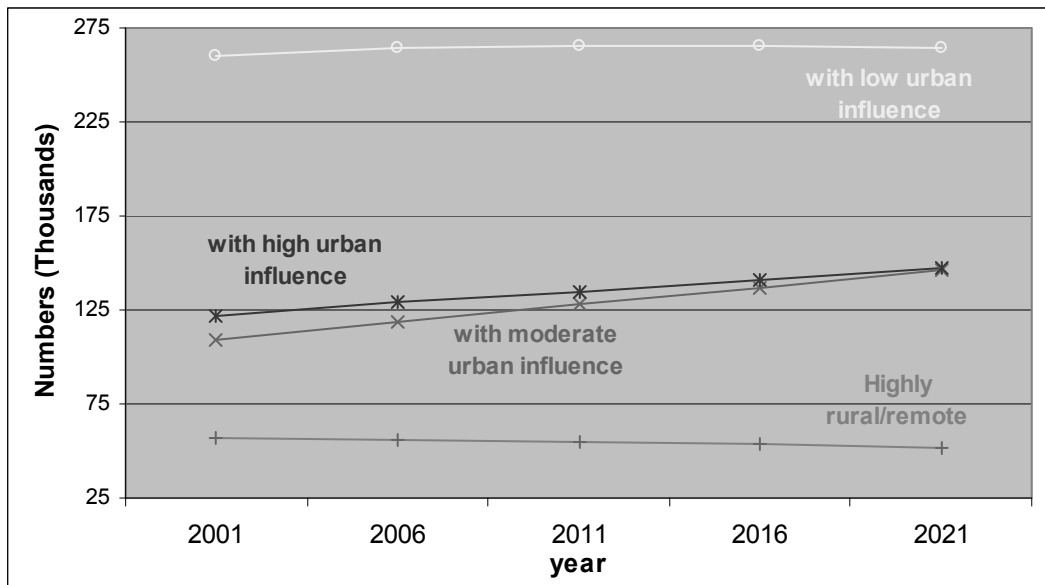
Source: 1991, 1996 and 2001 censuses of population and dwelling.

## 2.4 Projections

Statistics New Zealand provides population projections for the different types of rural and urban areas (*New Zealand: an Urban/Rural Profile*, 2005). These estimates are based on the 2001 census usually resident and formulated using the ‘cohort component method’. In this method, the population estimates are ‘calculated by updating the size of each age-sex cohort in the base population, for births, deaths and migration within each age-sex cohort according to the specified fertility, mortality and migration assumptions’. The analysis of short-term and long-term historical trends, recent trends shown in other countries, government policy, information provided by local planners, and other relevant information are taken into account to represent future trends as accurately as possible. However, Statistics New Zealand indicates that these projections only represent the overall trend but do not attempt to project specific annual variation.

Statistics New Zealand estimates that the population is not going to grow in the same way in the different types of rural areas, as Figure 22 suggests. Thus, rural areas with high and moderate urban influence are expected to grow faster than the national average until 2021 (with an increase of respectively 34 and 21 per cent, compared with 16 per cent nationally), while the medium projection for rural areas with low urban influence suggests that the population of these areas will increase by only two per cent. Concerning the population of highly rural/remote areas, population projections indicate that it is likely to decline by about nine per cent over the same period.

**Figure 22: Projected resident population for rural areas, 2001-2021**



Source: Statistics New Zealand, *New Zealand: an Urban/Rural Profile* (<http://www.stats.govt.nz/NR/rdonlyres/A2FDF8E9-32AD-487D-AEE7-040F513EE777/0/NZUrbanRuralProfile2.pdf>)

## 2.5 Regional population change

This section aims at examining the main changes that occurred in New Zealand population, at a regional level, over the last fifteen years. A map of New Zealand regions is presented in Figure 23 below.

**Figure 23: Map of New Zealand regions**



Source: Ministry for the environment, <http://www.mfe.govt.nz/rma/councils/index.html>

Table 1 gives the total numbers of inhabitants in each region at the four last Census of Population and Dwellings, and indicates the relative change from one census to the next. Most of the regions have gained inhabitants over the whole period (as the last column indicates), the two exceptions being Taranaki region and Southland region.

**Table 1: Change in regional population, 1991-2006**

Year	1991	1996		2001		2006		
Region	Total	Total	% change 91-96	Total	% change 96-01	Total	% change 01-06	% change 91-06
Northland	126,789	141,867	11.89	144,363	1.8	154,392	6.9	21.8
Auckland	943,776	1,077,207	14.14	1,173,639	9.0	1,321,074	12.6	40.0
Waikato	331,026	357,294	7.94	364,986	2.2	393,171	7.7	18.8
Bay of Plenty	203,982	230,463	12.98	245,100	6.4	264,180	7.8	29.5
Gisborne	44,265	46,089	4.12	44,142	-4.2	48,681	10.3	10.0
Hawke's Bay	138,336	144,294	4.31	146,109	1.3	151,755	3.9	9.7
Taranaki	107,124	106,572	-0.52	102,681	-3.7	104,697	2.0	-2.3
Manawatu-Wanganui	224,763	229,989	2.33	222,123	-3.4	225,696	1.6	0.4
Wellington	400,284	416,019	3.93	427,542	2.8	456,657	6.8	14.1
Tasman	34,029	40,035	17.65	44,880	12.1	48,309	7.6	42.0
Nelson	36,456	42,075	15.41	43,560	3.5	45,372	4.2	24.5
Marlborough	35,145	40,242	14.50	42,531	5.7	46,182	8.6	31.4
West Coast	31,566	35,670	13.00	34,464	-3.4	35,844	4.0	13.6
Canterbury	438,171	478,911	9.30	494,952	3.3	541,515	9.4	23.6
Otago	177,525	193,131	8.79	194,487	0.7	209,850	7.9	18.2
Southland	99,951	100,758	0.81	94,371	-6.3	95,247	0.9	-4.7
Area Outside	738	933	26.42	816	-12.5	660	-19.1	-10.6
Total NZ	3,373,926	3,681,546	9.12	3,820,749	3.8	4,143,279	8.4	22.8

Source: Statistics New Zealand.

Table 2 concerns the total numbers of agriculture and fishery workers by region, the percentage of these workers in the total workforce, and the change from one census to the next. It seems interesting to link these data to the ones presented previously in the preceding figure. Indeed, the proportion of the labour force working in agriculture could be a good indicator of the rural or urban nature of a region, and could therefore allow examining a possible relationship between a decrease or an increase in a region's population and its rural or urban nature. However, no clear relationship can be emphasized here; there is no obvious trend of loss of inhabitants in highly rural regions for example.

**Table 2: Regional numbers of agricultural and fishery workers, 1996-2006**

Year	Agricultural and Fishery Workers						% Change in the Numbers of Agriculture and Fishery Workers		
	1996		2001		2006		1996-01	2001-06	1996-06
	Total	%	Total	%	Total	%	%		
Northland	10,179	19.42	8,658	15.75	7,911	12.29	-14.94	-8.63	-22.28
Auckland	10,890	2.23	12,576	2.36	12,171	1.94	15.48	-3.22	11.76
Waikato	26,223	16.87	23,043	14.14	21,618	11.64	-12.13	-6.18	-17.56
Bay of Plenty	11,136	12.14	10,443	10.37	9,720	8.20	-6.22	-6.92	-12.72
Gisborne	3,582	20.29	3,159	17.64	2,817	14.60	-11.81	-10.83	-21.36
Hawke's Bay	10,845	17.44	9,051	14.15	8,028	10.97	-16.54	-11.30	-25.98
Taranaki	7,989	17.01	7,641	16.60	6,918	13.49	-4.36	-9.46	-13.41
Manawatu-Wanganui	13,500	13.73	11,658	11.93	11,112	10.17	-13.64	-4.68	-17.69
Wellington	5,055	2.56	5,706	2.73	5,403	2.31	12.88	-5.31	6.88
Tasman	5,712	30.50	4,737	23.05	3,741	16.05	-17.07	-21.03	-34.51
Nelson	1,671	8.95	1,161	5.93	831	3.77	-30.52	-28.42	-50.27
Marlborough	3,345	18.43	3,294	16.87	3,864	16.99	-1.52	17.30	15.52
West Coast	2,157	15.19	1,992	14.28	1,926	11.86	-7.65	-3.31	-10.71
Canterbury	18,834	8.58	17,916	7.65	17,613	6.53	-4.87	-1.69	-6.48
Otago	9,102	10.81	8,262	9.52	8,196	8.18	-9.23	-0.80	-9.95
Southland	9,726	20.86	8,103	17.90	7,683	15.94	-16.69	-5.18	-21.01
Area Outside	162	42.52	87	22.83	96	26.02	-46.30	10.34	-40.74
Total	150,108		137,487		129,648		-8.41		-13.63

To finish with, Table 3 presents the average age of inhabitants in each region at the three last Census of Population and Dwellings, and the percentage change from one census to the next. The average age has been increasing in all the regions since 1996. Here again, no obvious relationship between these figures and the two previous tables can be easily underlined, even though it can be noticed that this increase in average age has been less important in highly urban regions (Auckland, Wellington) than in other regions.

**Table 3: Regional average age, 1991-2006**

<b>Year</b>	1996	2001		2006	
<b>Region</b>	Average Age	Average Age	% change 96-01	Average Age	% change 01-06
Northland	35.20	36.99	5.1	38.43	3.9
Auckland	34.03	34.66	1.8	35.04	1.1
Waikato	33.89	35.25	4.0	36.40	3.3
Bay of Plenty	35.46	36.84	3.9	37.99	3.1
Gisborne	33.39	34.55	3.5	37.16	7.5
Hawke's Bay	35.19	36.35	3.3	37.43	3.0
Taranaki	35.14	36.91	5.0	38.09	3.2
Manawatu-Wanganui	34.47	36.18	5.0	37.32	3.2
Wellington	34.63	35.57	2.7	36.34	2.2
Tasman	36.03	37.50	4.1	38.96	3.9
Nelson	36.72	37.94	3.3	39.33	3.7
Marlborough	37.44	39.59	5.7	41.07	3.7
West Coast	36.44	38.81	6.5	40.34	3.9
Canterbury	36.57	37.62	2.8	38.31	1.9
Otago	36.32	37.78	4.0	38.44	1.7
Southland	35.49	37.30	5.1	38.43	3.0
Area Outside	33.97	35.87	5.6	39.38	9.8
Total NZ	34.92	36.03	3.2	36.82	2.2

Source: Statistics New Zealand.

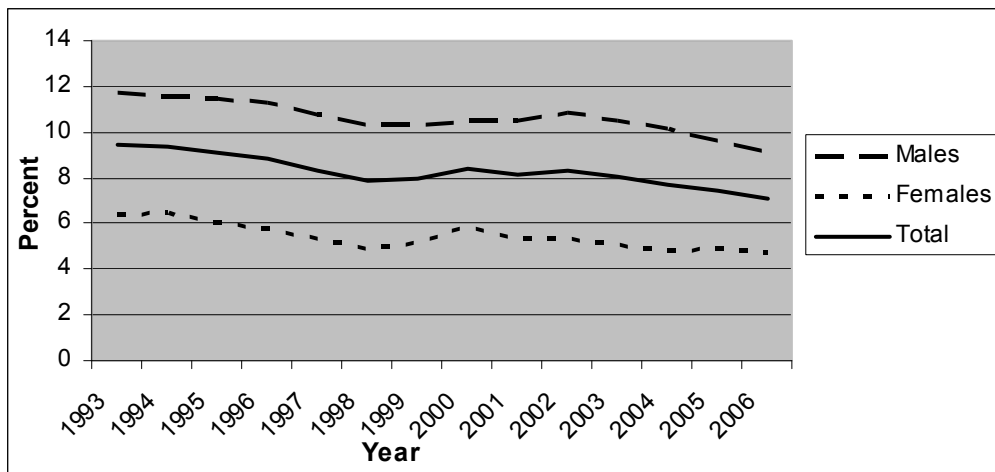
## Chapter 3

### Farm Labour Change Over Time

#### 3.1 Numbers of agriculture and fishery workers

Agriculture still plays a major part in New Zealand economy, with the agricultural, horticultural and forestry sectors providing more than 60 per cent of New Zealand's export earnings for the year ended 31 March 2005 (New Zealand Official Yearbook 2006). The proportion of New Zealand labour force working in the agriculture and fishery sector, however, has decreased, with less than ten per cent of the workforce working as agriculture, forestry or fishery workers in 2006, compared with just under 20 per cent in 1951. Figure 24 represents the change in the proportion of agriculture and fishery workers in the total labour force between 1993 and 2006.

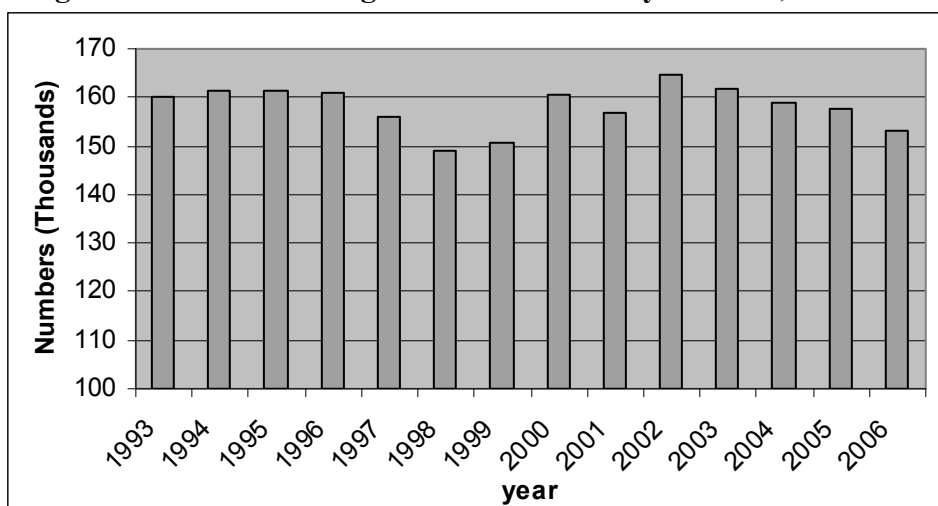
**Figure 24: Proportion of agriculture and fishery workers in total labour force, 1993-2006**



Source: Labour Market Statistics 2006 (<http://www.stats.govt.nz/NR/rdonlyres/FC56B1A7-FE92-4F78-A05C-0FD95943778C/0/LabourMarketStatisticsfinalpdfversion.pdf>)

However, this decrease is not directly linked to a decrease in the absolute numbers of agriculture and fishery workers. Figure 25 indicates that the trends for the absolute numbers show some similarity with the ones illustrated on Figure 27, with a decrease in agriculture and fishery workers from 1996 to 1998, followed by an irregular increase until 2002, and then by a new decrease from 2002 to 2006.

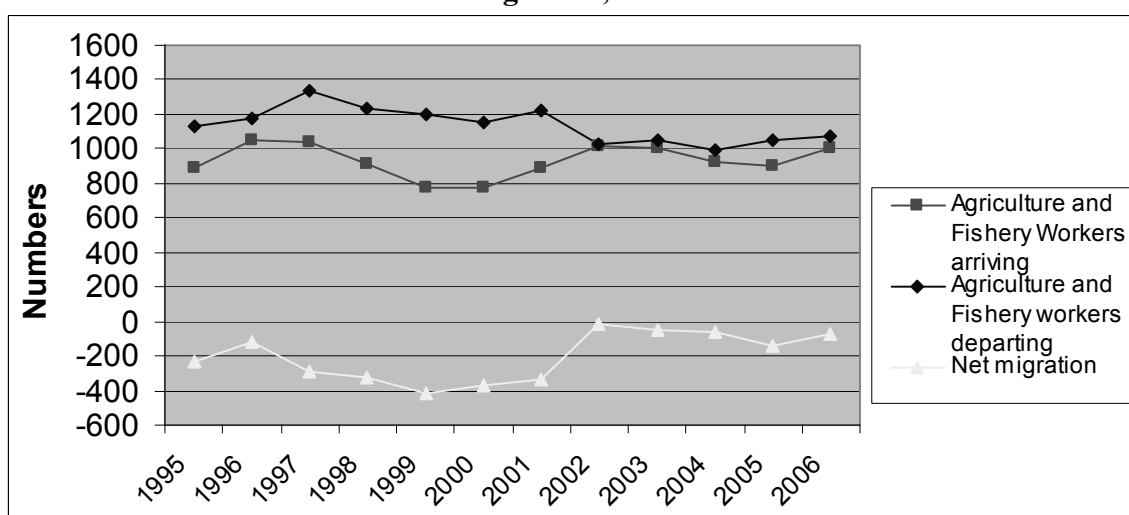
**Figure 25: Numbers of agriculture and fishery workers, 1993-2006**



Source: Labour Market Statistics 2006 (<http://www.stats.govt.nz/NR/rdonlyres/FC56B1A7-FE92-4F78-A05C-0FD95943778C/0/LabourMarketStatisticsfinalpdfversion.pdf>)

The numbers of people working in Agriculture and Fishery sectors can be influenced by permanent and long-term migration, as every year some overseas workers decide to stay in New Zealand while New Zealand ones intend to depart permanently or to be away for a long stay. Thus around one or two per cent of the permanent and long-term migrations concerned agriculture and fishery workers during the last decade. Figure 26 indicates that between 1995 and 2006, agriculture and fishery workers in New Zealand experienced a trend of net permanent and long-term migration losses, with more workers leaving New Zealand than overseas visitors arriving. However, this trend did not affect more than one per cent of the total agriculture and fishery workers.

**Figure 26: Numbers of agriculture and fishery workers affected by permanent and long-term migration, 1995-2006**

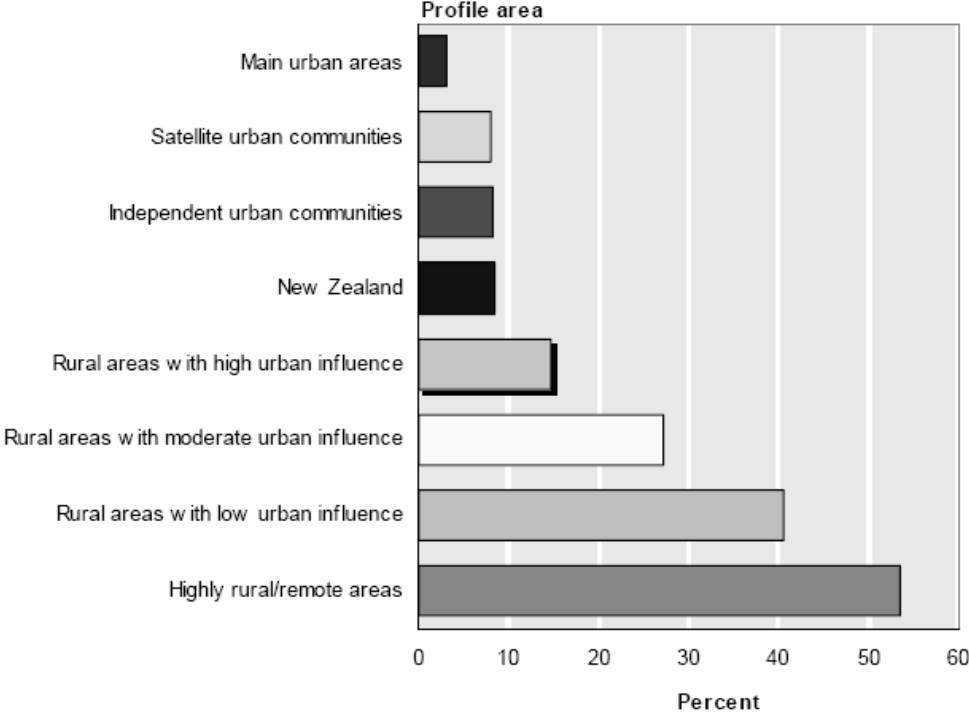


Source: Labour Market Statistics 2006 (<http://www.stats.govt.nz/NR/rdonlyres/FC56B1A7-FE92-4F78-A05C-0FD95943778C/0/LabourMarketStatisticsfinalpdfversion.pdf>)



These agricultural and fishery workers are not homogeneously distributed over the country, as Figure 27 illustrates. Rural areas with low urban influence and highly remote ones have a high proportion of their inhabitants employed in agricultural occupations, while in areas where urban influence is more important, other types of occupations are more frequent.

**Figure 27: Proportion of agriculture and fishery workers by profile area, 2001**



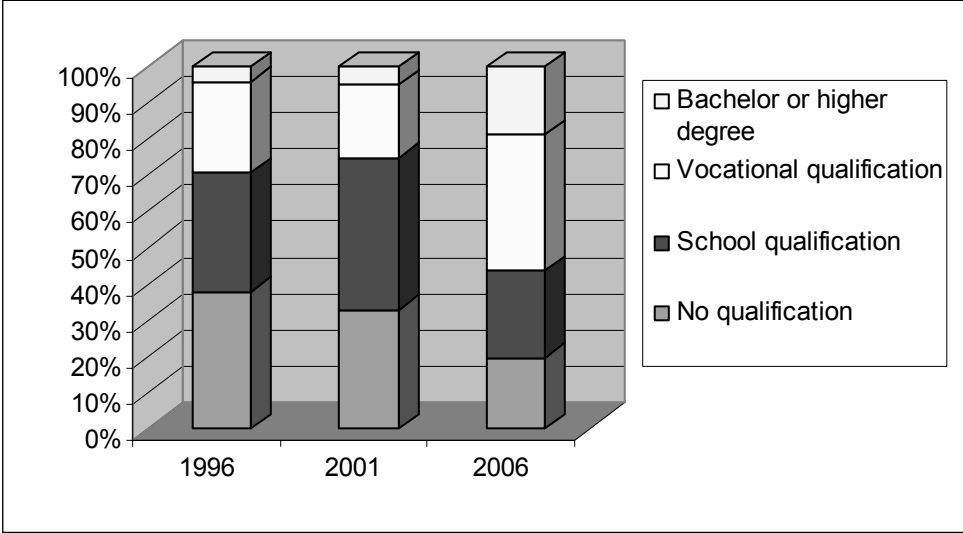
Source: Statistics New Zealand, *New Zealand: an Urban/Rural Profile* (<http://www.stats.govt.nz/NR/rdonlyres/A2FDF8E9-32AD-487D-AEE7-040F513EE777/0/NZUrbanRuralProfile2.pdf>)

A more detailed analysis of this distribution, taking into account the different types of production, shows significant differences between the categories of rural areas (Statistics New Zealand, 2006, *An Urban/Rural Profile*, p.92). Thus in 2001, in rural areas with high urban influence, livestock producers were the most numerous (28%), followed by crop and livestock producers (20%), and by gardeners and nursery growers (20%). The profiles for the other rural areas were quite different, the major difference being a lower proportion of agricultural workers employed in gardening and nursery growing. In these regions, livestock production, or livestock production mixed with other types of farming, also employed a higher proportion of agricultural workers: almost two-thirds in rural areas with moderate urban influence and highly remote ones, and half of workers in rural areas with low urban influence. A higher proportion of them were also working as dairy farmers or dairy farm workers: 22 per cent in rural areas with moderate urban influence, 31 per cent in rural areas with low urban influence, and 28 per cent in highly rural areas.

### 3.2 Qualifications of the farm labour force

When educational qualification is examined, the main trend over the past decade seems to be an increase in highly qualified agriculture and fishery workers and a decrease in the numbers of workers with no qualification. Thus, Figure 28 shows that in 2006, only 19.6 per cent of agriculture and fishery workers had no qualification (instead of 37.9 per cent in 1996), while 18.8 per cent had a bachelor or higher degree (as compared to 4.3 per cent in 1996).

**Figure 28: Highest educational qualification of agriculture and fishery workers, 1996-2006**

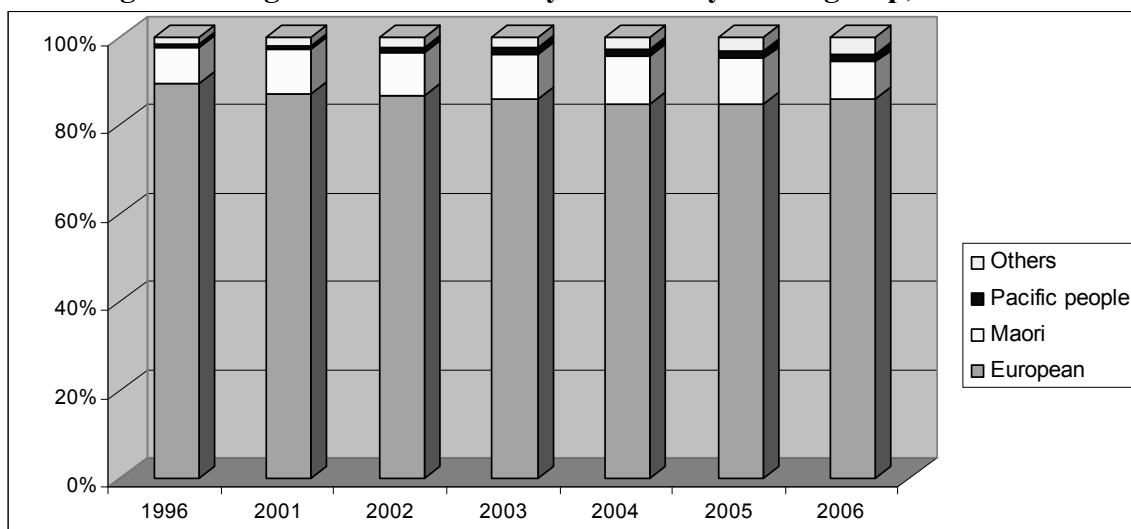


Source: Statistics New Zealand, *Labour Market Statistics 2006* (<http://www.stats.govt.nz/NR/rdonlyres/FC56B1A7-FE92-4F78-A05C-0FD95943778C/0/LabourMarketStatisticsfinalpdfversion.pdf>), and 1996 and 2001 census of dwelling and population

### 3.3 Proportion of the farm labour force belonging to different ethnic groups

Just like the national population, the population of agricultural and fishery workers is composed of people identifying with various ethnic groups, and the proportion of each ethnic group is varying over time. Figure 29 contains information on the proportion of agriculture and fishery workers belonging to the different ethnic groups. European people remain the largest ethnic group, with 85.8 per cent of agriculture and fishery workers being European in 2006. However, this proportion is lower than that of 1996 when it reached 89.3 per cent of the total, and the size of this ethnic group has been decreasing in absolute numbers. Workers identifying with the Maori ethnic group had the second highest proportion. The proportion of workers from the Pacific ethnic group increased from 0.6 per cent to 1.8 per cent between 1996 and 2006 which represents the highest rate of growth (22 per cent per year on average over the last five years, however still low in absolute terms), followed by that of the ‘other’ ethnic group from 1.6 per cent to 3.9 per cent over the same period.

**Figure 29: Agriculture and fishery workers by ethnic group, 1996-2006**

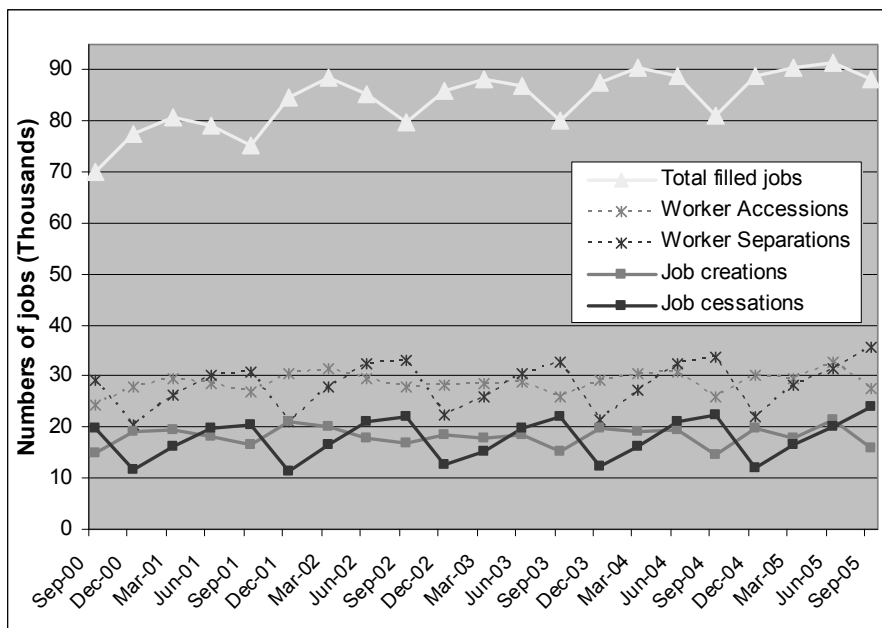


Source: Statistics New Zealand, *Labour Market Statistics 2006* (<http://www.stats.govt.nz/NR/rdonlyres/FC56B1A7-FE92-4F78-A05C0FD95943778C/0/LabourMarketStatisticsfinalpdfversion.pdf>)

### **3.4 Labour market dynamics in the agriculture, forestry and fishing sector**

This section presents information on labour market dynamics – including average hourly earnings and job and worker flows – for the agriculture, forestry and fishery industry. New Zealand has enjoyed employment growth in the agriculture and fishery industry for the past decades. Between 2001 and 2005, the numbers of filled jobs in this sector grew by about nine per cent, even though the average rate of increase per year has become slower over this period (3.6 per cent for the year ended March 2003, that compares with 1.7 per cent for the year ended March 2004 and 1.2 per cent for the year ended March 2005). These trends in employment growth are represented in Figure 30, as well as the job and worker flows that help explain them.

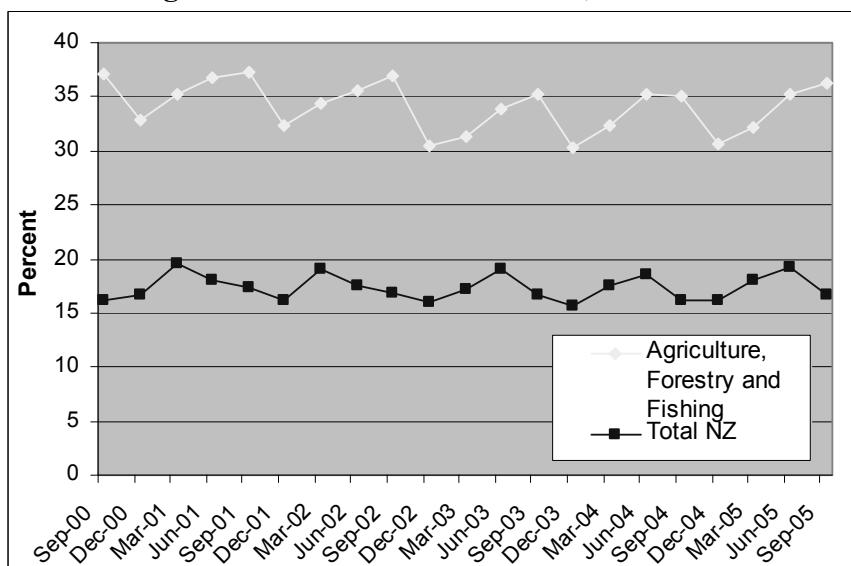
**Figure 30: Job and worker flows, 2000-2005**



Source: Statistics New Zealand, *Labour Market Statistics 2006* (<http://www.stats.govt.nz/NR/rdonlyres/FC56B1A7-FE92-4F78-A05C-0FD95943778C/0/LabourMarketStatisticsfinalpdfversion.pdf>)

The agriculture, forestry and fishing industry contributed about 13.5 per cent of all jobs created and 15 per cent of jobs that ended in the year ended September 2005. It also had the highest average worker turnover rate, with a rate about twice as high as that of total New Zealand workers as shown in Figure 31. For instance, in September 2005, the worker turnover rate was 36.2 per cent for agriculture, forestry, and fishing industry as compared to 16.7 in New Zealand as a whole.

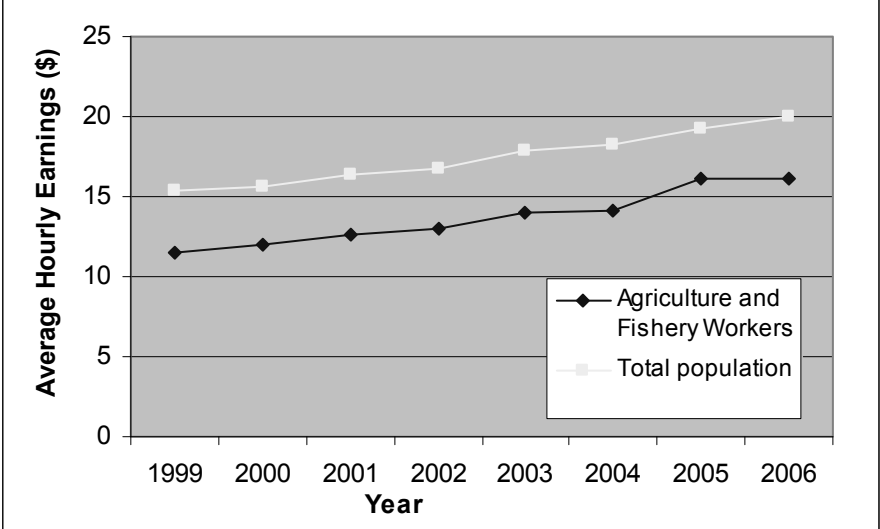
**Figure 31: Worker turnover rate, 2000-2005**



Source: Statistics New Zealand, *Labour Market Statistics 2006* (<http://www.stats.govt.nz/NR/rdonlyres/FC56B1A7-FE92-4F78-A05C-0FD95943778C/0/LabourMarketStatisticsfinalpdfversion.pdf>)

Agriculture and Fishery Worker average hourly earnings increased by 39.9 per cent between 1999 and 2006, while during the same period, average hourly earnings increased by 30.1 per cent for the whole New Zealand population earning income from wage or salary jobs. The average hourly earnings in this industry still remained inferior to the average in total population, as Figure 32 indicates.

**Figure 32: Average hourly earnings for those earning income from wage/salary jobs, 1999-2006**



Source: Statistics New Zealand, *Labour Market Statistics 2006* (<http://www.stats.govt.nz/NR/rdonlyres/FC56B1A7-FE92-4F78-A05C-0FD95943778C/0/LabourMarketStatisticsfinalpdfversion.pdf>)



## **Chapter 4**

### **Conclusion**

The history of New Zealand population over the last century has been characterized by a shift from a rural society to a highly urbanized one. Meanwhile, the differences in demographic characteristics between rural and urban population and the intern migrations between rural and urban areas have been responsible for a marked differentiation between populations of the different types of areas. Thus, the rural population has been aging faster than the urban one, and it has had a deficit in the youngest and oldest age categories for the last decades. However, in the same time, some of the distinctive qualities of the rural population have rather been decreasing over time. This is the case for example for the child-woman ratio and the age dependency ratio, and for the sex-ratio (number of males per 100 females, that still remains higher in rural areas than in urban ones). This suggests that it is likely that in future, there will be fewer differences between urban and rural population with regards to these indicators.

These changes in rural population are most likely linked to changes in farm labour and to availability of work in rural areas. An important element is also the development of lifestyle blocks which creates an important movement of people to rural areas close to important urban centres. These rural areas under high urban influence are expected to attract more inhabitants over the years to come, which will probably result in a population growing faster than the national average in these areas.





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