# CHALLENGES FACING AGRICULTURE IN NEW ZEALAND

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## Abstract

*The rural population of New Zealand as a proportion of the total is falling. An important consequence of this is diminished representation for the rural sector in the House of Representatives and on regional councils. The agricultural group within the rural sector is dominated by livestock farmers. Environmental legislation, passed in recent years, has important implications for livestock farmers. A major study on intensive farming and the environment questioned some common practices, in particular use of artificial nitrogen and some aspects of irrigation. The environment is now a major concern to many urban dwellers. In New Zealand, the bulk of the agricultural output is exported. Consumers in some markets, in particular Europe/UK, as well as some major retailers, are looking closely at environmental aspects associated with imported food as well as animal welfare, food safety and traceability. New Zealand livestock farmers face a number of challenges related to the environment and other issues. This paper addresses some of these.*

*Keywords: New Zealand, livestock, farmers, exports, environment, consumers*

## Introduction

New Zealand has some important climatic features. The temperate climate allows pasture to grow year round. The livestock sector dominates New Zealand agriculture. Approximately 45 million sheep, 9 million cattle and 1.5 million deer graze around nine million hectares of pastures. The bulk of the output from this sector (lamb, mutton, wool, dairy products and venison) is exported to often far distant markets. The focus of this paper is on the livestock sector.

In New Zealand this sector faces a number of challenges. The growth of the urban sector has diminished the political influence of the sector. Environmental groups are questioning some farming practices. Legislation is seen as raising compliance costs for farmers. "Property rights" are considered to be under attack.

Some challenges confronting New Zealand farmers, for example those associated with the environment, are being faced by farmers throughout the world. Of particular importance to New Zealand farmers are the perceptions of overseas consumers towards farming practices in New Zealand. The environment is one issue but there are others, for example, animal welfare.

This paper discusses some major challenges facing livestock farmers in New Zealand.

## Demographics and Political Representation

The composition of the New Zealand population is changing. The urban population is growing and an increasing proportion of the population has been born outside New Zealand. Currently approximately 14% of the population live in a rural area and far fewer New Zealanders now have any experience of agriculture and rural life than a generation ago.

The shift in population balance from rural to urban has important implications for the rural sector in terms of representation both in the House of Representatives (Parliament) and on regional councils, an important tier of local government.

Pastoral farming interests, are poorly represented in the House of Representatives, especially among the parties making up the current minority government. A search (www.parliament.nz/en-NZ/MPP/MPs/MPs1) of the published careers of minority government members of parliament identified two members who described themselves as "former farmers", another had been a poultry farmer while a fourth is currently an organic farmer. There is currently no member of parliament on the government side who is a conventional pastoral farmer.

There are twelve members of parliament on the opposition benches who list "small farmer" (1 member), "former farmers" (2) and "farmer" (10) in their careers.

The information about members of parliament is that provided by the members themselves; it is possible that some could describe themselves as "farmers" but who have chosen not to do so. This seems unlikely however, on the government side.

Regional Councils are important to farmers as they are involved with, *inter alia*, water and soil planning. There are twelve of these in New Zealand and farmers have a "reasonable" voice due to representation by a ward system. However recent legislation (Local Government Amendment Act, 2004) allows regional councils to elect councillors "at large" rather than on a ward basis. This is likely to diminish farmer representation as most regional councils have largely urban populations, making it more difficult for farmers to be elected as councillors. The national farmers organisation, Federated Farmers, has made representations to some regional councils to maintain a ward structure for councillor elections.

This shift in political power provides important challenges for livestock farmers and those who act on their behalf. They need to put more resources into submissions to select committees (in Parliament) to ensure a farmer perspective is heard on proposed legislation important to farmers. At the regional council level, farmers must make submissions on regional council's plans relating to soil and water issues where these impact on farmers.

**Legislation**

Recent labour related legislation, whilst not focused on farmers in particular, has nevertheless impacted on them principally as employers. Examples included the Employment Relations Act 2000, as amended in 2004, the Holidays Act 2003, the 2004 amendment to the Health & Safety in Employment Act 1992 and the 2002 and 2006 amendments to the Parental Leave and Employment Act to name but a few. These Acts have increased costs for employers. The test for the acceptable dismissal of an employee has been tightened, employees as from 1 April 2007 now get four weeks annual leave (previously three weeks) and penalties have been increased for failing to take "all practicable steps" to make the workplace safe. Farmers have however, gained the right to paid parental leave for the self employed, something that previously existed only for employees.

Other legislation with important implications for farmers include the Biosecurity Act 1993, the Hazardous Substances and New Organisms Act 1996, the Resource Management Act 1991 (RMA), all of which are related to the environment, and the Animal Welfare Act 1999, again to give only some examples.

These Acts impose obligations and costs on farmers. The RMA for example, requires resource consents for a range of activities. A current goal of Federated Farmers is to bring about changes to the legislation and the way it is implemented by regional and district councils. The Federation has identified the RMA

as its "top priority over the next two to three years". It remains to be seen whether it will achieve its goal, given the strength of the environmental interests, in New Zealand.

Farmers must now be "approved handlers" before being able to purchase and use a wide range of chemicals for control of weeds, pests and diseases. Furthermore some chemicals must now be "traced", requiring records to be kept on purchases, usage and inventories. Farmers must be able to prove that chemicals have been applied at the correct rate. This requires accurate records keeping.

For some farmers these obligations can be seen as a burden only, providing few if any tangible benefits. This is not necessarily so. Careless use of chemicals, for example on products exported, can lead to severe penalties. A beef farmer who supplied a meat processor with cattle contaminated by the chemical Endosulfan was traced after detection in South Korea. This led to a temporary halt on exports from the plant where the meat was processed. The farmer is being sued and is reported as saying that "the family farm in Northland is at stake" (The Dominion Post, Saturday, February 3 2007). The case is currently before the Court.

**Livestock Exports and the New Zealand Economy**

In relation to challenges facing the livestock sector in New Zealand, it is important to appreciate that New Zealand has a population of currently 4.17 m. Although the population is growing, domestic demand will always be limited.

The livestock sector (dairying, sheep and beef, deer) are a major contributor to export receipts. Pastoral exports in the years 1998 to 2002 provided between 39.4% and 43.1% of total export income. If the returns from horticulture and arable, together with processed agriculture and forestry are included, total returns from primary exports ranged from 68% to 69.5% of total export receipts over the years 1998 to 2002.

Most of New Zealand's pastoral production (dairy products, lamb, mutton, beef and venison) is exported with only a minor proportion being consumed domestically (Table 1). Furthermore New Zealand has a high proportion of the product that is traded internationally. For example, New Zealand produces only about 2% of the total world milk production, but has about 40% of the world trade in dairy products.

**Table 1: New Zealand's export production and share of world trade.**

| Product | New Zealand production exported (%) | New Zealand share of world trade (%) |
|---|---|---|
| Wool | 90 | 75 |
| Lamb | 90 | 53 |
| Mutton | 79 | |
| Beef | 78 | 40 |
| Dairy | > 90 | |
| Deer | 95 | |

*Source: Primary Economics (NZ) Limited, operating as Meat & Wool Economic Service of New Zealand, August 1999, Wellington.*

Most of the livestock sector's output will always need to be exported. Livestock farmers must compete in these markets with domestic producers and possibly other exporters. For New Zealand farmers to be competitive, costs on the farm, and in processing, transport, distribution and marketing are critical. In some markets pastoral farmers face trade barriers, for example tariffs and/or quotas, making it more difficult to compete.

The challenge for New Zealand farmers remains, in principle, unchanged. New Zealand farmers must meet market demands more efficiently than their competitors. New Zealand farmers need to think about how to create a lasting competitive advantage in the market place by understanding and exceeding customers' expectations.

Customer expectations, particularly in Europe, are changing rapidly. Price alone is no longer enough. Food safety, traceability, environmental issues and animal welfare are all part of the mix. More recently "food miles" and "buy local" are surfacing as important issues. Food must also deliver a range of health and nutritional benefits.

**Environmental Challenges**

An important selling attribute of New Zealand in its overseas markets, particularly in Europe, is thought to be its clean green image. While New Zealand's environmental record is relatively good, there are issues that need to be, and are, being addressed. The Parliamentary Commissioner for the Environment identified some of these in 2004 (Growing for Good, Intensive farming, sustainability and New Zealand's environment, Parliamentary Commissioner for the Environment, 2004).

Farming in New Zealand has intensified in recent years. In the dairy sector cows per hectare rose by 19% between 1994 and 2002, urea fertiliser per hectare went up by 162% between 1996 and 2002. In the sheep and beef sector, in intensive farms stock per hectare fell by 20% between 1981-2002 but lamb export carcass weights were up by 25% over approximately the same period. Tonnes of fertiliser on intensive farms in the sheep beef sector increased by 167%-263% over 1991-2002.

The adverse environmental impacts of higher fertiliser and intensification on waterways, ground water and lakes was carefully documented by the Commissioner. The focus of the report is on synthetic nitrogen fertiliser and irrigation water as these have been the two key drivers lifting productivity in recent years but they also have the potential for adverse environmental impacts.

The issues raised in the report are being addressed by the regional councils. In some instances councils have placed limits on nitrogen use. The Waikato Regional Council now requires a resource consent for pastoral farming in the catchment around Lake Taupo.

New Zealand farmers face not only environmental challenges from fellow New Zealanders, but also increasing scrutiny from consumers overseas, because so much agricultural output is exported. The New Zealand Director General of Agriculture summed it up this way in his address to the AARES Annual Conference in 2007.

> *"While other countries may find that they can't be green if they are in the red, New Zealand can not be in the black if we aren't green".*

An important environmental issue for New Zealand farmers that has surfaced in recent times is the so-called "food miles". Proponents of "food miles" claim that the further food has to travel before it reaches the market place, the less sustainable or energy efficient it is and therefore the closer to the market food is

produced, the better it is for the planet. The concept of food miles is flawed as it fails to reflect the total energy used which includes production and processing as well as transport.

Research at Lincoln University has found that the energy used in producing lambs and dairy products in New Zealand and then shipping them to the UK used less energy than that used by UK farmers. This finding has received extensive publicity in New Zealand and has also been reported overseas (Economist, December 9-15th, 2006).

Although the food miles concept has been shown to be flawed, it nevertheless remains a concern in New Zealand. Thus the Minister of Trade was reported saying, New Zealand producers are:

> *"still threatened by the malicious use of food miles by protectionists and lobbyists seeking to shelter British producers from competition."*

Most will be aware that the major UK retailers (Tesco, Marks and Spencer, Asda and Sainsbury) have plans related to the environment for produce sold in their stores. Tesco intends to label all produce airfreighted to the UK. An even more ambitious proposal by the same company is to develop a "carbon footprint" labelling all products sold in their stores. It is the belief of the Minister of Trade that:

> *"measuring carbon footprints for New Zealand exports actually makes us look good"*.

Climate change, global warming and greenhouse gases have all been significant issues for some time, boosted in importance following the release of the Stern Report. For New Zealand farmers there are once again special challenges. Globally only 14% of greenhouse gases come from agriculture, but in New Zealand the estimate is 49%. The greenhouse gases in New Zealand consist of methane from livestock and nitrous oxide from animal waste and nitrogen fertiliser. Agricultural emissions have grown by one per cent per year since 1990 and it is anticipated that this rate will continue, at least for the medium term. However, productivity gains from farming animals more efficiently have resulted in lower emissions per unit of output.

Forests play a vital role in lowering greenhouse gas emissions, absorbing carbon dioxide as they grow but releasing much of the carbon back into the atmosphere at harvest. Exports of wood products are an important part of the New Zealand economy constituting 10.4% of all merchandise exports in the year ended June 2006. However, in recent years deforestation (taking land out of forestry into another land use) of plantation forests has increased rapidly. Thus in the 2006 year about 12,700 ha were converted into pastoral farming but only 6000 ha were planted in forestry.

The relatively poor returns from forestry in recent years have discouraged the conversion of land from pasture into forestry and encouraged the switch to livestock farming, following harvesting of the trees.

Government in February 2007, released a document on sustainable land management and climate change. This outlined options and invited submissions on New Zealand's future sustainable land management and climate change policies for the agriculture and forestry sectors. Currently meetings are being held throughout the country with farmers, growers and foresters to discuss the options foreshadowed in the document. These include possible taxes on nitrogen fertiliser and on land in forestry if that is converted to livestock farming following harvesting.

**Increasing Competition from Low Cost Producers**

New Zealand has built its agricultural export base on being a low cost producer of farm products of acceptable quality. However, competition from South America and other countries is challenging New

Zealand's position. For example, in the last 15 years growth of exports of many dairy and meat exports from China has been twice that of New Zealand.

The UN Food and Agriculture Organisation has reported that over the last 20 years meat production grew by 230 percent and dairy production by 200 percent. This growth has been largely due to adoption of technology and practices already developed and/or used in New Zealand. There is a quality gap between exports from New Zealand and those from South America, but it is clear that those countries can access the resources, skills and technology to make the necessary product improvement.

Some farmers in New Zealand see South America as a threat to livestock farmers in New Zealand, but others see it as an opportunity. A small but unknown number of New Zealand farmers are known to have purchased farms in the "southern cone" countries of South America, of Chile, Argentina, Uruguay and Brazil.

In 2006 a major agribusiness firm, PGG Wrightson, promoted "NZ Farming Systems Uruguay" with the intention of buying and developing farms for dairying and beef production in Uruguay using New Zealand technology and expertise in grassland management. A sum of $105 m NZD was raised. According to the Prospectus and Investment Statement,

> "dry matter production in Uruguay can be boosted to New Zealand levels"

and

> "New Zealand style dairy farms can be established for about 25% of the cost of buying an established dairy farm in New Zealand".

At 15 December 2006, the company owned nearly 6000 ha in Uruguay at various stages of development.

**Perceptions and Knowledge of New Zealand**

New Zealand is a small relatively isolated country and sometimes our agricultural policies are not understood by all, even when one might expect that they would be. For example, subsidies were removed from farming in the mid 1980s, the process being fully documented (Farming Without Subsidies, 1990). Many people, organisations, for example Federated Farmers and our own government, have put the message across at international conferences and meetings that New Zealand farmers are not subsidised.

In my role as editor of the Journal of International Farm Management, I came across this sentence in a paper submitted for inclusion in the Journal:

> *"The US dairy industry, similar to other developed countries, is heavily supported through government programs that assist in stabilising milk production and farm incomes"*.

The writer, not an American, holds a leading position at a university. I was very surprised at this sentence; either the writer was not aware that the New Zealand dairy industry is not subsidised or he/she considers New Zealand not to be a developed country. I exercised my editorial prerogative and changed the sentence!

A group of New Zealand dairy farmers, suppliers of Fonterra (a major New Zealand dairy co-operative), when visiting Germany were told by lobbyists from that country that Fonterra should be broken up because it was driving up international prices. The New Zealand farmer who led the group claimed that a Mr Simon Michel-Berger from Copa-Copega, a lobby group representing Europe's 11 million farmers, made the comment about Fonterra because (mistakenly) he believed that it was a state owned enterprise.

Accurate information for consumers will be extremely important in the marketing of New Zealand's primary produce. It is vital that farmers, the major exporters and government ensure that consumers overseas are well informed on matters important to them.

Well informed consumers however, may not be enough. Strongly held attitudes and beliefs are not easily changed. For example, the belief that one should "buy local" to support domestic producers might not change, even if it was shown that this leaves a greater carbon footprint than purchasing an imported item.

## Economics

An important factor influencing the economics of livestock farming in New Zealand is the exchange rate. As over 80% of the output of an average sheep and beef farm is exported the exchange rate is a major determinant of farm gate prices. Table 2 shows for a typical sheep farm, a forecast of gross farm income, total farm expenses and net farm profit for 06-07 assuming exchange rates of US68.0 cents, UK 35.0 pence and 0.51 Euros. The implications of a 5% appreciation or depreciation of the New Zealand dollar on gross farm revenue, farm expenditure and net farm profit is also shown.

**Table 2: Sheep and beef farm revenue and expenditure and impact of variation in the exchange rate**

| | | **+ 5% Exchange rate change** | **- 5% Exchange rate change** |
|---|---|---|---|
| Gross farm revenue | $297,500 | $320,100 | $2777,400 |
| Farm expenses | $235,000 | $236,570 | $233,570 |
| Net farm profit | $62,500 | $83,530 | $43,830 |

*Source: Meat and Wool New Zealand, Paper No. PO 701, February 2007.*

It is clear from Table 2 why New Zealand farmers pay very close attention to the exchange rate. A devaluation of 5% over the whole season increases net profit by approximately 33%. Input costs would increase due to the rising cost of the imported component of inputs, for example, fuel, pesticides, plant and machinery and fertiliser. However, the increased gross farm revenue from a 5% currency depreciation ($22,600) farm exceeds higher input costs ($1570). The converse applies if the currency should appreciate.

## Conclusions

New Zealand farmers face waning political power. In future it is likely a decreasing number of New Zealanders will have experience and knowledge of the rural sectors. The challenge for farmers is to reach out to the urban sector, to explain the issues confronting farmers, but most importantly, to try and understand the concerns of urban voters and to identify areas of common concern and shared interest. Farmers will find it difficult, if not impossible, to obtain legislative change if their wishes are strongly opposed by the urban sector.

In some respects the challenges facing New Zealand livestock farmers now are similar to those confronting previous generations of livestock farmers. The bulk of the output from the livestock sector

must be exported, markets must be found and customers' needs met. Farming profitability will always be an issue, as will the exchange rate because of its impact on farm gate prices.

The principal challenge now facing livestock farmers in New Zealand will be, particularly in Europe, to meet the needs of far more discerning consumers. Environmental considerations, animal welfare, food quality, and traceability are just some of the issues that will progressively become more important. Importantly, New Zealand farmers must perform ahead of their competitors in an ongoing sustainable way. Only if they can achieve this will the long term future of New Zealand farmers be assured.

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