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The political economy of a productivist agriculture: New Zealand dairy discourses

Mairi Jay

Department of Geography, Tourism and Environmental Planning

Private Bag 3105,

University of Waikato, New Zealand

Email address: mairij@waikato.ac.nz

Fax: +64 7 838 4633

Abstract

The New Zealand dairy industry faces political and commercial pressure to improve its environmental performance on the one hand while maintaining economic efficiency and commercial competitiveness in a global marketplace on the other. The growing scale and intensity of dairy production have caused significant cumulative environmental impacts. Productivist constructions of environmental improvement by the industry are an example of ecological modernisation by a large international agri-food organisation in the face of global trade competition and domestic political pressures. This paper explores the productivist constructions of environmental management by the New Zealand dairy industry in the context of global economic competition and notes an alternative response inspired by an ethic of sustainability. It suggests that despite global pressures of economic competition it is possible to incorporate non-material values into farm management provided these are recognised and rewarded.

Key words: agri-environmental practices, dairy farming, productivism, political economy, New Zealand

Introduction

New Zealand is the world's single largest exporter of milk and milk products, with 30% of the world free trade (MAF, 2003:17). New Zealand dairy farmers are part of a large industrial-commercial complex that processes the milk they produce and assists them with production. This infrastructure shapes their knowledge, attitudes and objectives; and it influences the way they farm. Income is mainly based on milk production (with a minor proportion from the sale of calves and cull cows); technology – from breeding records and artificial insemination, to the machinery of milking machines and milk tankers – forms the basis of their means of production; and dairy advisory services, farm discussion groups, and family or peer networks provide the main source of practical advice and information. Hence the dairy industry infrastructure is the commercial, industrial and social context within which farmers work and make land management decisions.

The industry is dominated by a single dairy company, *Fonterra Co-operative Group*, with more than 11,000 farmer shareholders¹. Fonterra processes milk into more than 600 products (e.g. desserts, milk powders and proteins, cheeses and cheese ingredients, and pharmaceuticals), and exports milk products to 140 countries (Fonterra 2003).

Cows are raised out-doors year-round so that most of their waste is excreted onto pasture, where it percolates into groundwater or surface drains, streams, lakes and wetlands (Duncanson et al., 2000; Boothroyd et al. 2000; Davies-

Colley et al., 2001; 2004; EW, 1998; Vant et al., 2000). In addition to pollution, New Zealand agriculture in general and dairying in particular has caused an almost total loss of native plants and animals over large areas. For example, in the Waikato region, which supports a third of the national dairy herd, lowland native forest has been reduced to 6% of its former extent in the 160 years since the beginning of European settlement (Leathwick, Clarkson and Whaley 1995). The environmental health of the region is compromised by continued agricultural development, particularly dairying (Boothroyd, et al. 2000; Burns et al. 2000; EW 1998).

As a consequence of its environmental impacts, New Zealand dairy farming has been widely criticised (PCE, 2004). The industry has responded by bringing environmental concerns within the scope of dairy farm management. However, analysis of mainstream industry discourse suggests that environmental issues are framed and perceived narrowly in terms of their link to production. Concerns for broader environmental issues such as landscape amenity or conservation of native biodiversity have not, to date, been part of the discourse.

The aim of this paper is to illustrate how political and commercial pressure on New Zealand's dairy industry to improve its environmental performance has prompted a discourse of environmental management that is consistent with the productivist ethic that characterises the industry and with a political economy of competitive survival in a global marketplace. However,

alternatives are possible if the focus of management can be changed from production for its own sake, to long-term, whole-of-farm management.

'Productivism' has been applied by British scholars to the form of intensive agriculture that predominated in the United Kingdom between the Second World War and the beginning of the 1990s (Battershill & Gilg, 1997; Ilbery & Bowler, 1998; Walford, 2002; Ward & Lowe, 1994; Wilson, 2001). Lowe et al. (1993, 221) defined productivism as 'a commitment to an intensive, industrially driven and expansionist agriculture with state support based primarily on output and increased productivity'. As summarised by Wilson (2001), it includes an ideology and a system of industrial agriculture that is focused on quantitative outputs as a central aim of land management. While the New Zealand form may vary in detail from that described for the UK, a key element of New Zealand dairy farming and the dairy industry is its focus on expansion of production and economic efficiency.

Research for the paper included a 9-month participant observation study of five dairy farm families, in-depth or telephone interviews with more than 140 farmers, and a discourse analysis of dairy industry reports such as annual reports and advertising literature of dairy supply companies. Each of the five farm families was visited for one day a month and the researcher participated in the farming activities for that day, from milking in the dairy shed to eating at the dinner table. The discourse analysis noted common themes and concerns expressed by leaders of the industry as well as day-to-day information directed at farmers. The in-depth interviews involved semi-structured

questionnaires to explore farmer perspectives about farm management practices and philosophy. Structured questionnaires developed from the in-depth interviews were used for the telephone survey.

Characteristics of contemporary western industrial agriculture

Bowler (1992: 11-13) has summarised industrial agriculture in westernised countries as a process by which farming becomes increasingly subject to industrial modes of production. It involves the creation of economies of scale, reliance on inputs from other sectors of the economy (e.g. machinery, fertilizers, feed, agri-chemicals), resource substitution (capital for land and labour), organisational features associated with the business firm, specialization of labour, and mechanisation. Within this system, farms are subordinate to food processing, manufacturing and marketing structures. At the same time, due to technology, they have power to influence the physical environment to an ever-increasing degree.

As farms are subordinated to industrial modes of production, they become less a lifestyle and more a business. Land comes to be viewed as a commodity rather than a place of dwelling. Commodification of land as a medium of production means that it tends to be viewed and managed primarily for its commercial value as opposed to non-material values such as cultural or natural heritage, personal or group identity, recreation and enjoyment, or quality of life.

Environmental degradation related to agriculture has long been noted by European scholars (Buller, Wilson and Holl, 2000; Potter, 1998a, 1998b). For the UK, Benton et al. (2003) identified specific practices that reduce diversity of agricultural landscapes. These include consolidation of farms so that land is increasingly dominated by fewer and larger farms; reduction in the botanical and structural variety of crops and grasslands grown on a single farm; loss of semi-natural habitats such as ponds, uncropped field margins and scrub; simplification of crop rotations; reduction in species variety by weed removal and sowing pasture with a limited number of herbage varieties. Similar conclusions have been expressed by Stoate et al. (2001) for Europe more broadly while the impact of agricultural policies on biological diversity and landscape has been the subject of a high level conference organised by the Council of Europe (CoE, 2002).

The New Zealand dairy industry reflects most of the characteristics described by Bowler and other analysts. Farms and farm management are closely integrated with the industrial processing of milk. The milk factories are tied to global food distribution systems and influenced by consumer preferences in their international markets. Despite state deregulation of the agricultural sector in 1985/86, dairy farm production remains highly regulated by requirements related to animal health, milk hygiene, occupational health and safety, environmental standards, and financial recording systems. In short, New Zealand dairy farming is characteristic of productivist farming in most western industrial economies (Le Heron, et al. 1996; Le Heron and Roche,

1997). The environmental impacts that have occurred parallel those that have occurred in other parts of the developed world.

Global competition: a driver of production and efficiency

Since 1985 when the New Zealand government withdrew subsidies and almost all other forms of support from agriculture, New Zealand farmers have been fully exposed to market competition in the global marketplace. Ninety six percent of the nation's milk exported is exported.

New Zealand's dairy industry is enormously influenced by world-wide shifts and changes in agri-food structures. The merger which created Fonterra in 2001 was justified by a senior dairy representative of the time as follows (Roadley,2001)ⁱⁱ:

The more immediate challenge and opportunity that I am focused on is ensuring we respond well to the globalisation of our dairy industry. . . . That's driving the acquisition of dairy companies already working in protected markets, and the alignment with them in joint ventures. The other key driver of industry consolidation is globalisation by our customers. The top 25 food retailers in the world – our customers – are now involved in a dozen or more major acquisitions annually. . . . You must have scale to have any leverage with a customer as powerful as a Wal-Mart. That reality is driving dairy companies to merge, to acquire and to enter into

joint ventures with one another. . . . That's the dynamism of the international dairy industry that we are part of. There are going to be fewer and fewer, but bigger and bigger companies chasing milk supply and customers.

The global context of the industry shapes the values and concerns of dairy industry leaders. International changes in the industry are perceived by many as a threat to survival. There is anxiety that if the New Zealand dairy industry does not match global trends it will become a victim of the process. The means to counter global competition are perceived to involve growth, efficiencies of production ('productivity gains'), economies of scale, scientific and technological innovation, and commercial superiority. Size and power are considered to confer 'leverage'.

A key competitive advantage is considered to be the low costs of production allowed by New Zealand's equable climate and year-round grass growth. For dairy industry leaders, efficient, low cost production of commodity products (butter, milk powder), coupled with the development of customer-focused specialised dairy ingredients, are key to international competitiveness (Ferrier, 2004: 2, 6). These aims are reflected in Fonterra's 2004/05 annual report (Fonterra, 2005) where it states: 'Our strategy is designed to grow these returns through strengthening our position in the commodities, specialty products, foodservice and branded dairy products market, defending our low cost position, building valuable customer partnerships and increasing our rate of innovation.' (Fonterra, 2005 p.7) and: 'Fonterra's strength is the ability of

our farmers to maintain low-cost production structures while continuing to grow milk supply by an average three per cent year-on-year (Fonterra, 2005, p.08). Given the environmental impacts of existing levels of production, it is difficult to see how dairy farmers will be able to maintain low cost production structures at a 3% year-on-year growth rate without further environmental deterioration.

The views promoted by Fonterra leaders and other dairy organisations are influential in the day-to-day culture of dairy farmers. Their views are reflected in the publications and corporate statements of the respective organisations as well as outlets such as farm news services, farm field days and industry competitions. They constitute a major element in the discourse of dairy farming.

At the level of individual farmers, the preoccupation with production translates into an ethic where production is viewed as an end in itself. All of the five farm families involved in the participant observation study expressed pride in their production and a desire to maintain production at high levels. When asked what indicates a good farmer, one replied:

Farmer: 'Well, I think high production seems to be the main one really. It's like running a race, it's the fastest that gets the prize; it's the farmer that produces the most milk is the most successful farmer.'

Researcher: 'And where does profit come into it?'

Farmer: 'Well profit is just what you get out of it.'

Another farmer revealed the personal importance of production by describing his emotional reaction to a drop in milk supply that his cows had recently experienced as a result of changing weather conditions:

‘This season, because it was such a high peak, the rate of drop off after the peak was a blow. The most frustrating thing was trying to hold. It’s a real kick in the guts to see cows dropping after the peak, because you’ve worked so hard to get cows up there and then, well, the longer you can keep them up there, that’s where you make all your production gains; other than having a wet summer.’

This farmer’s description demonstrates the commitment to production that many farmers feel and the stress that an unexplained drop in milk production can cause. The two quotes, by different farmers, suggest that production is viewed as an ethical good, and that it inspires a degree of emotional commitment that is beyond the calculus of profit and economic reasoning.

Society-wide social change and environmental concerns

Since the middle of the 20th century concerns have grown about the impacts of development on valued features of the landscape such as lakes, wild rivers, coasts and mountain lands, and the loss of native forest and wetland (Young, 2004). In 1991, after nearly two decades of increasingly widespread political activism from environmental groups, the government enacted legislation to

control detrimental environmental effects of developmentⁱⁱⁱ. The legislation was intended to promote management of natural and physical resources in a way that would sustain the potential of those resources to meet the foreseeable needs of future generations, safe-guard the life-supporting capacity of air, water, soil, and ecosystems, and avoid, remedy or mitigate any adverse effects of activities on the environment (NZ Government, 1991, Part 2). Further change in social attitudes to the environment was expressed by the publication of a National Biodiversity Strategy in 2000 (DoC/MfE, 2000). The Biodiversity Strategy called for a halt to the decline in New Zealand's indigenous biodiversity, and action to maintain and restore viable populations of indigenous species (DoC/MfE, 2000:18).

The resource management legislation, national biodiversity strategy and other policy documents reflected a changing relationship between the environment and New Zealand society as a whole. Whereas earlier in the century the environment had been considered as ripe for exploitation, by the 1970s, 1980s and 1990s a majority of New Zealanders no longer perceived it as the ground for unlimited production. Rather, it was view as an important source of non-material values, including tourism and national identity. Vis-a-vis the world, natural icons such as the kiwi and the native tree fern had become an important symbol of national pride. The fact that icons such as the kiwi were seriously in danger of extinction was a further cause for concern. By the 1990's New Zealand society as a whole had developed a breadth of environmental concerns that include but go beyond issues of water quality and agri-chemical use.

The environmental consequences of intensive dairy production created a groundswell of consumer and public concern about the issue. In 1999 the Ministry for the Environment (MfE 1999) published a report that expressed concern over the extent and effect of dairy farm effluent on surface waterways and groundwater. In the same year, a blistering attack on the industry by a leading environmentalist (Salmon, 1999a; 1999b) reflected and highlighted the concerns of environmental groups. In 2001, senior representatives of the influential environmental group Royal Forest and Bird Protection Society and the New Zealand Fish and Game Council met senior dairy industry officials (Stuff - Rural, 19/7/01), and the Fish and Game Council set aside a \$1 million 'fighting fund' to oppose dairy industry developments that they considered would impact detrimentally on the environment (Waikato Times, 2001). A report by the Ministry for the Environment in the same year (MfE, 2001) assessed the marketing value of a 'clean green' image for the New Zealand dairy industry at between \$241 million and \$569 million.

Industry response to environmental concerns

In response to the growing cry of 'dirty dairying', Fonterra undertook talks in 2002 with Ministry for the Environment officials and representatives of regional government which culminated in the signing of a *Clean Streams Accord*. The accord requires farmers to fence off their streams from access by livestock. An assessment of farm environmental performance becomes part of the terms and conditions of supply that each farmer holds with the Company. Public

comments by Fonterra officials make it clear that the company has been influenced by commercial concern about its marketing image and fear that if it does nothing, then regulations will be imposed by government (NZH2003a).

The introduction of the *Clean Streams Accord* is potentially an important means to persuade farmers to protect waterways from pollution but it raises questions of equity and enforcement. Farmers are expected to bare the cost of fencing regardless of economic or physical circumstances; farmers with multiple streams through their property will be less fortunate than those with few or no streams; farmers in physically or economically less favoured areas will find the cost less easy to withstand than those in richer regions. Equally, there is doubt that the company will be willing to pursue rigorous enforcement of environmental performance if the proportion of farmers who do not comply is high, or if non-compliers include farmer-shareholders who are politically influential. There is also room for debate about what is a 'stream' and about whether protection of surface water (as opposed to groundwater) is sufficient to offset the effects of dairy effluent on paddocks. In short, the *Clean Streams Accord* provides promise but no assurance that waterways will be improved.

The industry has introduced additional ways to make dairy farmers more aware of their environmental impacts, but the typically narrow focus of the industry's environmental concern is illustrated by the *Dairy Excellence Awards*^{iv}. The awards are intended to identify and publicise elements of dairy farming 'excellence', and they are a defining discourse for the industry because they involve major industry players as sponsors. Sponsors include a

'who's who' of the New Zealand dairy industry such as Fonterra, major banks, the largest dairy breeding agency, dairy research and advisory services, and major farm supply firms (e.g. suppliers of fertiliser, dairy machinery, and crop seeds).

Judging criteria for the Award in 2002 involved 5 areas of farm management (Fencepost.com,2002):

1. *Financial performance* – including profitability of farm business, economic farm surplus, percentage return on capital, total factor productivity measure, gain in productivity between years, financial management, financial goals, and business growth);
2. *Human resources* - including personal goals, family, community and other interests, industry involvement, communication skills and professional development, labour productivity, staff management, occupational health and safety issues.
3. *Dairy Management* - including profitable utilisation of resources, balancing feed supply and demand, production per hectare, use of supplements, pasture management, maintenance and tidiness of property and farm dairy, awareness of sustainability issues in regard to pasture, property and forage management, soils and fertiliser knowledge and use, stock management and breeding.
4. *Product Excellence* - including milk quality performance, knowledge of the grading system, farm dairy maintenance and hygiene, knowledge of quality management concepts and implementation of a quality

management system, understanding of market requirements and their rationale, animal welfare issues and practices.

5. *Environmental Integrity* – including water management, management of waterways and wetlands, where applicable, nutrient management practices, effluent management understanding, practices and outcomes, soil management knowledge and application, waste management issues and application, projects and innovations specifically aimed at environmental outcomes, community/industry involvement in environmental issues.

The judging criteria and the language associated with the Award include metaphors and concepts that relate almost wholly to farming as a business. The criterion for environmental integrity are focused on issues closely related to production (water quality, effluent disposal and soil management), but not to a way of life. There is no suggestion that 'environment' could include non-material values such as aesthetics or heritage. Furthermore, although the elements of the environment identified for the award are linked to the system of production (water management, waste management and effluent disposal), the means for addressing the problems are divorced from production; that is, solutions to the problems of production are viewed separately from the system that produces them in the first place. For example, although pasture and stock management are critical aspects of environmental management (involving issues such as fertiliser use, stock density, the weight and number of cows on different types of topography) criteria for environmental integrity are kept separate from stock and pasture management.

In short, the *Dairy Excellence* criteria for environmental integrity appear to be predicated on a concern to offset the negative environmental effects of a business operation. If one were to start with a different metaphor, such as 'way of life', 'stewardship' or 'landcare', it is possible that the criteria might be different. Elements of the environment that might be related to a way of life could include aesthetic or visual amenity, an environment that is healthful to the people and the animals that live there; care and protection of features that reinforce a sense of history, personal or family identity, or attachment to the land (e.g. archaeological features, features of beauty, or recreational pleasure). The way that environment is constructed within the discourse practice of the industry leads to a focus on the environment as a fund of resources for production rather than the environment as a biophysical basis of life and ecosystem function, or as a home and place of livelihood.

An alternative approach: farm environment awards

Changing social attitudes about environmental sustainability have also influenced farmers and in the early 1990s this prompted the development of an alternative approach to farm management. The alternative is the '*Farm Environment Award*', an institution which began at the initiative of a regional government agency (Environment Waikato) and a regional conservation organisation, with strong support and advice from leading farmers in the region. The Award assesses farms (different awards for different types of

farms) on the basis of the question: “Can what is being done now, still be working successfully in 100 years?” (EW, 2005).

The Award invites farmers to submit applications, and a team of judges then inspects each farm and provides the farmer with detailed comments and recommendations. Members of the judging team include farmers, farm consultants and members from the finance community, but also, crucially, representatives from conservation organisations. Elements considered by the judges include (Ballance, 2005):-

- Achieving farm production targets;
- Protecting and enhancing natural features;
- Matching land types to land use;
- Management of waterways;
- Habitat enhancement;
- Energy efficiency, considering alternatives to achieve total on-farm efficiency;
- Pasture and crop health;

The assessment process is a key element of the award. Judges offer farmers the chance to discuss their aims and challenges, and to obtain free expert advice. For many of the farmers who enter the award, the motivation is less the prospect of awards and prizes, than an opportunity to learn from the specialist knowledge and skill of the judges.

Although small and regional at its inception, with only modest amounts for prize money, the award became nation-wide in 2004 and has extended its geographical reach to include 8 of 13 regions. It differs from the Dairy

Excellence Awards by a focus on the long-term consequences of management, by explicit recognition of non-production uses (such as protection of natural features and habitat), and by a 'whole-of-farm' perspective where management of non-production values are considered together with production. Farm profitability is included as a consideration, but is balanced by other aspects of management. A defining consideration is that the land use matches the land capability. By matching land use to land types, the award recognises that sustainable long-term production must be viewed in relation to the physical capacities of the farm, such as soil, water, drainage, topography and climate. Where the emphasis of the *Dairy Excellence Award* is performance of the farm as a business entity, the emphasis of the *Farm Environment Award* is long-term management of the farm as a social and biophysical entity.

Discussion

Despite environmental value changes in New Zealand society that prompted the policy initiatives towards more sustainable environmental management, the primary focus of the mainstream dairy industry remains closely related to the production ethic and a business efficiency model. The ethic is tied to the economic reward system (with income almost wholly dependent on milk production) and reinforced by discursive messages from industry leaders, agricultural advisory and support services, and everyday information to the dairy farmer. Alternative values are marginalised within the discourse of farm management.

It is tempting to point the finger at the dairy industry and apportion blame for the damaging environmental consequences of farming. However, the industry is subject to wider social forces, both national and global. National forces include the agricultural research organisations, agri-chemical firms, farm equipment and technology services, financial services, agricultural advisory services, and New Zealand society at large. Global forces include an agri-food system of giant retail chains and competitive suppliers. World Trade Organisation rules are specifically designed to reduce barriers to the movement of production and trade (WTO, 2005) and restrictions based on social or environmental considerations are difficult to justify in terms of World Trade Organisation rules^v. Perhaps realistically, industry leaders perceive that large-scale, efficient, low-cost milk production is the only way that New Zealand dairy farmers can hope to hold their own in world markets.

The dairy organisations and New Zealand society at large benefit from an industrial agriculture which commodifies land and water, detaches elements of the environment from their organic and holistic context (as parts of local and regional ecosystems) and converts them into separate objects which can be manipulated according to the dictates of economic efficiency and market calculation. Soil and water are not viewed as integral elements of ecosystems, natural habitats or the basis of the nation's biophysical life-support system, but as factors of production. Almost all of the agricultural agencies with which dairy farmers deal are special purpose in their interests and operation: Fonterra as an organisation is mainly concerned with

manufacturing and marketing of milk products; *Dexcel* focuses on the technologies and knowledge of dairy farm systems; *Livestock Improvement* concentrates on animal breeding; the fertiliser companies focus on soil deficiencies as they can be rectified by fertiliser application; seed firms look only at pasture and forage crops. This partial and fractured dispersal of interests among different organisations – what might be termed ‘pigeon holing’ – reinforces a fragmented approach to farm management. A soil problem generally involves a specialised and narrowly focused solution, regardless of the wider consequences to regional waterways. There is little incentive to consider whether the on-farm answer to a soil or a weed problem may give rise to problems beyond the farm gate. Specialisation and differentiation between different organisations discourages holistic awareness of farms as organic and lived-in places and as part of region-wide human and natural communities.

In contrast, the approach fostered by the still fledgling *Farm Environment Award* is an alternative that attempts to re-direct farm management from a narrow focus on the factors of production to a wider focus on the farm as a place of multiple values and inter-generational importance. This perspective still overlooks the importance of the region, where the cumulative impact of individual farmers may amount to regional environmental degradation. But because the judges include individuals from a range of concerns, it exposes the farmer to the ideas and values of people who are not farmers but nevertheless have legitimate interests and concerns about the management of the countryside. The *Farm Environment Award* recognises and rewards

protection of such non-production values as natural features and habitat enhancement.

Conclusion

In policy terms one can reasonably ask the question: 'What's to be done?' The answer depends on circumstances, levels of organisation, and political philosophy. Many political ecologists would argue that the capitalist system that underpins the New Zealand dairy industry is incapable of delivering the goals of environmental or social sustainability (Allen, 2004; Escobar, 1996; Goodman and Redclift, 1991; Goodman and Watts, 1997; O'Connor, 1993; Redclift, 1993). Others (Gibbs 2000; 2003; Gouldson and Murphy, 2000) would argue that technical and ecological rationality offer solutions based on the application of economic instruments to curtail the free use of environmental services such as the effluent-disposing properties of soil and water; and technological developments to enable the reduction and monitoring of environmental impacts. In the views of this author, both perspectives have value; capitalism drives the current system of world trade and it is unrealistic to hope that New Zealand dairy farming can survive except by the main tenets of technological, scientific and business efficiency. But the New Zealand *Farm Environment Award* suggests that capitalism need not involve the single-minded appropriation of resources for profit and it does not necessarily involve a short-term calculus of benefit. The farmers who enter the view their farms not as a collection of production factors – soil, water, animals, and so forth – but as a place of residence and livelihood, to be

maintained for 100 years. The principles they apply to their farm management include values of production efficiency, but also those of environmental care and long-term stewardship. Often, the two objectives are complimentary in that natural features of aesthetic or ecological value, such as broken topography or poor soil, may be of less value for production. The key is to provide social recognition at all levels of policy: the farm, the industry, and the World Trade Organisation.

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ⁱ The other two dairy companies are Tatua Co-operative Dairy Co, with approximately 140 shareholders (dairyfarm milk suppliers) and Westland Co-operative Dairy Co. with 345 shareholders

ⁱⁱ John Roadley was the first chairman of Fonterra and of the interim agency that preceded the creation of Fonterra from New Zealand Dairy Group of Companies, Kiwi C-operative Dairy Company, and the New Zealand Dairy Board.

ⁱⁱⁱ The main legislative platform was the Resource Management Act, 1991, which controls the use of natural resources including land, air, water, and coastal space.

^{iv} Formerly named the Dairy Farmer of the Year Award. Changes have been made to the awards in recent years which reflect a rapid shift within the industry towards greater concern for environmental performance, but the emphasis on business and economic efficiency remains a key element of the competition.

^v Unlike farmers in the United States and the European Union, New Zealand farmers receive no government support; they compete with farmers in other countries such as Australia and Argentina, as well as the subsidised farmers of European and North America.