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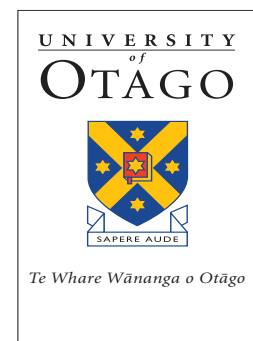
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Linking farmer wellbeing and environmentally sustainable land use: a comparison between converting organic and conventional dairy farmers

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Executive Summary

This report provides a description of the relationship between wellbeing achieved by farming and the care of the environment as revealed in interviews with dairy farmers participating in the ARGOS programme.

Its purpose was to indicate how environmental care might be part of farmers' everyday life and become part of their sense of wellbeing and way of living a meaningful life. This report indicates how this is so for some dairy farmers and therefore that it is possible for farmers to associate environmental care with their own wellbeing. However it is also clear that other things may get in the way of this happening.

ARGOS dairy farmers used their unconscious knowledge of 'how' to farm, and this has enabled them to 'play the game' of dairy farming in the dairy sector. Farming is closely linked to New Zealanders' sense of national identity and as such has helped to form the unconscious knowledge of each farmer and their awareness and use of their human capital, in particular the symbolic capital gained from this activity of farming, to contribute to their sense of wellbeing. The use of land for farming and its impact on the environment is increasingly being challenged and is reflected in the views of organic farming practitioners who feel that 'what they are doing is right' and that it addresses the concerns of the mainly urban populace of New Zealand.

The dairy farmers in the ARGOS project can be seen to match the typology of committed and pragmatic organic and conventional practitioners. This demonstrates that the most likely farmers to next take up organic practices will probably come from the ranks of those who are presently exhibiting the characteristics of the 'pragmatic conventional' typology, who are carefully watching organic farmers to see what they do and how well they will go.

As organic dairy farming grows with its associated social capital infrastructure support networks (such as suppliers of organic feed, fertilisers and calves, discussion groups, vets interested in homeopathy, organic remedies and other 'organically certified treatments' etc.) some farmers will be able to see how the values and feelings associated with their unconscious knowledge can translate into new practices. Farming organically could come to be perceived as supporting the growing environmental awareness associated with a national identity of New Zealand as 'clean and green' thereby rewarding organic dairy farmers with not only economic capital but also symbolic capital, thus giving farmers a continuing, if not increased, sense of wellbeing and reducing the sense of risk associated with making such a change.

All dairy farmers interviewed were concerned that they exercised stewardship over the land they farmed so that it was passed on to the next generation in a healthy state. They also saw the lifestyle offered by dairying as being one in which they could freely exercise their daily autonomy to do what was 'right' to them, and this was extremely important to them.

Farmers' environmental practices were on a continuum ranging from those of many of the conventional farmers who wished to control things such as weeds and general untidiness, or try to make sure that the environment came to no harm, to those organic farmers who wished to proactively work with the environment or change their practices to make the environment 'better'. The feelings attached to doing these things increased farmers sense of their own wellbeing. It helped them feel that they were living meaningful lives, giving them a sense of undertaking something for the good of people and the land beyond themselves.

This sense of wellbeing could also be easily disturbed. Organic farmers were still characterised by some conventional farmers using some old stereotypes and this conflicted

with the identities organic farmers saw themselves as having. Similarly, the automatic association of dairy farmers with the slogan 'dirty dairying' also impacted on farmers' identities as dairy farmers did not see themselves as involved in such negative practices and many expressed pride in the quality of their streams.

Weather affected feed quality and the soil and therefore the happiness of the cows which was very closely related to farmers own sense of wellbeing as good farmers. There was also a risk entailed in taking on different practices with some farmers speaking of the stress of working with sick animals when they did not know how to treat them according to organic principles. However, others spoke of the transformation in themselves for what they felt was the 'better' as a result of making the change to organic practices. Conventional farmers were more prepared to take on the risk of borrowing large amounts of money.

Indications are that dairy farmers could be encouraged to see that the welfare of their cows would be enhanced by taking a proactive care of the environment (not just the soil) in which the cows live by taking account not only of production via the daily production figures and comparisons with previous years contained on the daily docket, but also stocking rates and other practices which may mitigate against this emphasis and which would enable a focus on fitting their farming operations to be more attuned to the environment in which they farm and the seasonal cycles which affect their farming.

Chapter 1: Introduction and method

1.1 Introduction

This report provides a description of the relationship between wellbeing associated with being a farmer and the care of the environment as revealed in interviews with dairy farmers participating in the ARGOS programme. Its purpose was to indicate how environmental care might be part of farmers' everyday life and become part of their sense of wellbeing and way of living a meaningful life.

Dairy farmers from the North Island of New Zealand work on some of the most attractive dairying land in the country. Whether the land is managed by a fourth generation farmer, or by a farming couple who have purchased their land relatively recently, when dairy farmers are asked about what makes them happy their replies almost always include a description of the land they farm:

Well you can see my view ... I mean I'm pretty lucky to have that and I do appreciate that ... I've told my wife she can carry me off here in a body bag (conventional practitioner).

It wasn't flat, but wasn't hilly. It was just sort of gently rolling. And after 10 years we sort of fell in love with that kind of country (organic practitioner).

New Zealand's farming landscape is regarded as being very beautiful in spite of significant environmental damage resulting from exploitative farming practices over many years (Valentine et al, 2007: 312). As dairy pasture has been developed much native vegetation and animal life has been destroyed, and streams and wetlands polluted from excessive use of nitrogen fertilisers and cow waste excreted directly onto the land or into surface drains. (The label 'dirty dairying' was ascribed to dairy farming practices in a report prepared for Fish and Game by the National Institute of Water and Atmospheric Research (NIWA) on research on water quality in waterways in 2002 (TVNZ, 2002)). This led to the development in 2003 of the 'Dairying and Clean Streams Accord' between Fonterra, Local Government NZ, Ministry of Agriculture and Forestry (MAF) and the Ministry for the Environment (MfE, 2003). The loss of diversity of landscape and changes in landscapes could be perceived as threatening to wellbeing, challenging traditional heritage values and the sense of stability which Antrop (2006: 188) has argued is "often associated with qualities such as tranquillity, health, ecological soundness, and authenticity". Cox, Johnstone and Robinson (2006: 35) argue that the physical aspects of a place set limits on the types of experience people may have, and therefore on the meanings that they construct about it.

Because a sense of place is linked to a sense of belonging, this is a significant determinant of the quality of life people can experience. In New Zealand, local bodies are now charged with responsibility for the wellbeing of their populations in all areas - social, environmental, economic, and cultural - enshrining the principle that environmental issues are a significant component of wellbeing (New Zealand Local Government Act 2002). However, widespread incorporation of changing environmental values into land management practice is relatively recent.

At one level, the current 'good dairy farming' discourse includes an awareness that practices which could harm land need to be minimised or prevented, and any damage repaired; and images of a 'clean and green' New Zealand are used as part of global marketing strategies. At another level, analysis of the mainstream dairy industry has suggested that "environmental issues are framed and perceived narrowly in terms of their link to production" (Jay, 2007: 267). The mega company, Fonterra, is owned by 12,000 dairy farmers, representing 95% percent of dairy farmers in New Zealand, which reinforces the

responsibility to cultivate and uphold the culture committed to maintain the asset the 'clean and green' image affords. As New Zealand has access to only about six percent of the total world market due to tariff barriers and other forms of trade protectionism, the dairy industry has had to think carefully about how it can keep an 'edge'. With the growth of interest in organic products, and the establishment of causal links between land practice management and environmental quality, Fonterra now offers dairy farmers incentives to convert to organic practices. To date, only a small proportion of dairy farmers have responded to this challenge.

Dairy farmers talk about their "having a feel for the soil and the earth and you know, the whole thing - it is not just milking cows" (conventional practitioner). The complexity of dairy farming extends from the local farmer's feel for the soil and the earth to working with the requirements of a global market over which they have little direct control. There are local government and dairy sector regulations to comply with, employment issues to negotiate, and unpredictable weather patterns. However, dairy farmers say that if their animals are happy, their pastures are growing, and they themselves can be outdoors, this affects their individual feelings of wellbeing, their ability to lead a life they think is meaningful.

"The thing that makes me happy, I think, is being outside and being. And I feel happier when I'm outside - when I think things are going well - that I've got plenty of grass ahead of me ... [and] there's few animal health problems. Because ... that lowers your stress levels and makes you happier ... I think also part of just job satisfaction is that it's the farm - I love being here because I grew up here. There's a bit of family history [here]" (organic practitioner).

1.2 Method and analysis

The quotations used in this report come from a set of data generated in 2006 through recorded interviews with 23 dairy farmers from the Waikato, Manawatu, and Taranaki districts of the North Island, as an add-on to the ARGOS FRST-funded programme which commenced in 2003. The majority of the dairy farms in New Zealand are found in these districts. Half of the dairy farmers in the set of interviews practice organic land management, the other half practice conventional land management. The farms chosen were in sets of two in the same district – an organically managed farm and a farm managed through conventional methods – matched for land and herd size

Half the interviews, across both types of management, were attended by farming couples. When present, female partners made equal and valuable contributions to the data. The extent of on-farm involvement by women ranged from being totally involved, like the women who practised homeopathy with the stock, and "did the calving", to those women who worked off-farm and had no everyday input. Some women preferred to do the accounts, others chose to do some milking, and helped out with the calving. The nature of their help tended to depend on factors such as provision of child care, or their need to care for children with disabilities, and/or voluntary work they were involved in with a variety of local organisations.

This sample is not representative of dairy farming in New Zealand, but a qualitative analysis of the data offers a chance to capture and understand what gives individual farmers personal satisfaction, and whether there is any association with methods of farm practice independent of locality. Several authors have written about factors relating to decision making by farmers concerning their preferences for land management, and typologies of farmers have been identified (Vanclay et al. 2006; Brodt et al., 2005; Darnhofer et al, 2005; Schmitzberger et al., 2005; Barkema, 1999; Fairweather, 1999; Beaudeau et al., 1996), but not a lot is understood about the values or beliefs which influence an individual farmer's sense of wellbeing in context.

The interviews were transcribed and a qualitative exploration of the resultant transcripts was carried out using Bourdieu's (1998, 1990) 'Theory of practice' as a way of framing the analysis. Using the qualitative research software package NVivo, excerpts of the interviews were collected into emergent themes and these were related to some of the literature on wellbeing and farming to produce a helpful way of bringing together farmer wellbeing and sustainability that is contained in this report. (For a fuller but still brief description of the qualitative research method, see Hunt et al., 2005).

1.3 Conclusion

This project is essentially exploratory and descriptive, seeking to answer the question to what extent is farmer wellbeing related to environmentally sustainable farming practices? In what respects do dairy farmers care about the land and how does this translate into practices? In order to answer the questions above in a comprehensive manner, this report first outlines the theoretical background before exploring relevant issues arising from a review of the literature. Results which are specific to farmer wellbeing and environmentally sustainable land use are then presented and discussed.

Chapter 2: Linking theory and data

2.1 Introduction

In this chapter, we describe the theoretical ideas of Pierre Bourdieu which informed our interpretation of the dairy farmer interviews. Excerpts from those interviewed are used to illustrate the Bourdieuan concepts we find useful. We then go on to look at some of the literature in which others have developed ideas about how the behaviours and practices of farmers can be interpreted and how a sense of identity and place can also add to our understanding of the relationship between farmer wellbeing and sustainable environmental practices.

2.2 The game of dairy farming: ideas from Pierre Bourdieu

From a theoretical perspective, the experience of wellbeing related to dairy farming is thought to be more likely when dairy farmers possess 'human capital' which they can use to negotiate and renegotiate their positioning in the wider fields of the dairy sector, giving them a more active sense of involvement beyond the production of milk solids. The capital can be social, cultural, economic or symbolic capital, or more usually a combination of one or more of these aspects. Much has been written about the notion of social capital, most notably by Putnam (2002), who drew his ideas from work of the French sociologist Pierre Bourdieu whose Theory of Practice is used to inform the qualitative analysis of data from the interviews. Webb, Schirato and Danaher (2002: 1) have argued that Bourdieu's concepts of habitus, field, and capital "constitute what is arguably one of the most successful attempts to make sense of the relationship between objective social structures (institutions, discourses, fields, ideologies) and everyday practices (what people do, and why they do it)".

2.2.1 Habitus

This project began with the idea that dairy farmers develop human capital in relation to their habitus, their socially embodied selves. Habitus designates a way of being, a habitual state and "in particular, a disposition, tendency, propensity or inclination" (Bourdieu and Wacquant 1992: 18). In describing habitus as a 'disposition to act', it is not necessarily conscious or articulated but has become embodied in people through practice (Adams, 2006: 514-516; Lau, 2006: 374-376, Thompson, 1992: 12-17). Such 'dispositions' have been influenced by family practices over the generations, community and national cultures, and educational systems. Habitus describes the taken-for-granted world, like a "fish in water" (Bourdieu and Wacquant, 1992: 127), enabling a "feel for the game" (Bourdieu, 1990: 66-68), and knowledge of what is the "right thing to do" (Bourdieu, 1998: 8). The notion of habitus is useful in understanding how individual dairy farmers constitute their worlds as meaningful, "worlds which are endowed with sense and value, in which it is worth investing one's energy" (Bourdieu and Wacquant 1992: 127). The concept is seen as a structuring agent which operates more or less at an unconscious level but which determines an individual's feel for the state of play in a particular field such as that of dairy farming. The female partner of a farming couple quoted below illustrates how habitus works in relation to practice when she links her dispositions towards her everyday organic practices with her embodied 'unconscious awareness'.

We see the physical changes in the farm whether it's the aesthetics or obviously in the hole we dig in the paddock. But it's the whole thing. We know how the cows are milking, how they look, how the young stock are doing, how the grass is growing, how it's all those components ... it's often like driving a car, you're driving, the things you're doing are in the unconscious but you still have an awareness and farming can be very much like that. Sometimes it's very obvious ... if a cow can't walk properly it probably means she is lame but the next day you might just walk into a paddock that the cows are in and it might just feel good (female partner of organic farming couple).

This farming couple have made a 'leap of trust' in their belief about their chosen method of practice, similar to material from other organic practitioners who talked about knowing that "what they do is right". This appears to be a significant component of their identity and pride in being organic practitioners.

2.2.2 Bourdieu's concept of 'field'

The concept of 'field' refers to the contexts in which people's everyday practices occur, and to the interactions that take place within them. All farmers share certain fields such as their local communities, those fields around the dairy sector, local and regional bodies, and the agricultural companies, all of which structure the ways in which farmers work. Organic practitioners have extra fields specific to their practice to negotiate, such as organic certification bodies, and specific mentors. The possession of the practical sense of habitus is necessary to negotiate fields and can be likened to a knowledge of how to play the game (of dairying), having a sense of both its history and its future (Webb, Schirato and Danaher, 2002: 49).

Material from the interviews showed that most dairy farmers have a sophisticated feel for the game of the dairy industry. The organic practitioner quoted below sees the main focus of the dairy company as being on production:

We're happy to be small dairy farmers ... everyone asks me are you up for this year? And we're down for the year but we're probably \$30,000 better off ... I should say I'm up but I love saying I've gone backwards, you know, because that's how they gauge you. Because the dairy company's got you brainwashed ... it's just this big game to get more production (organic practitioner).

He knows about the game and the rules his dairy farmer colleagues will use to judge him. However, he cynically sees the source of these rules as being the dairy company rather than the farmers, and that the company sets up these rules to benefit itself. It is also interesting that he sees it as a 'game' fitting Bourdieu's theory perfectly! The following quote from a conventional practitioner demonstrates what happens when the rules of the game change. Players may grumble about this constantly, but to play the game certain rules have to be adhered to. In this quote the farmer's habitus, or his sense of how to play the game in a particular way, is not a deterministic way of acting – it merely guides his shifting relations with the many players he has to contend with. He understands the need for the dairy company to market his product in such a way that retains its integrity in terms of its quality and standards under which it was produced as demanded by the customer, as well as the need to work on the wider image of New Zealand.

Yes and no ... you can't turn the clock back to the old days you know ... things are always looking to be improved and like hygiene and stuff - like standards are always getting higher because that is the demands of the market ... they want to get a good price, and customers say if it is good, how good is it? We want proof that it is good, so we have got standards in place to show that every shed could comply ... so every time you have to make another change it is a bit of a grumble and a grind but I think that it is for the good in the long run ... there was a bit of a grumble about Fonterra getting involved with environmental things ... what has that got to do with them, they are milk processors, but again it is to do with the market and their image of the product and where it's been produced and how its production is affecting the environment ... they all sort of want to make the customer happy (so) they want to spend more I suppose ... (conventional practitioner).

2.2.3 Human capital in its many forms

Habitus is acted out in different fields structured around types of capital such as economic, social, cultural and symbolic. A person engaging in a particular field seeks to increase their capital (Bourdieu, 1998: 32). Hence a person may use their social networks and their cultural capital such as education to increase their financial capital and symbolic capital or status and wellbeing, while maintaining and reinforcing their identity. Using Bourdieu's theoretical approach, a dairy farm is both an economic and a symbolic investment (Heilbron,

2001: 57). Not only is the farm a source of livelihood involving economic transactions with numbers of various actors across local and global dairy sectors, it is also an emotional investment linked to the family, to a project of biological and social reproduction in which ideas about the 'family farm' are central.

The concept of the family farm troubled most dairy farmers in this project. They talked about the recent rise in land values and the difficulty of young people being able to buy into a family farm in terms of their ability to pay out other family members, and their growing concern that the family farm unit may no longer be viable. They were disturbed at the trend for dairy farms to become bigger with off-farm owners; and also at the growing numbers of what they called professional 'life-styler blocks' – owned by people who usually worked in town at professional careers and who were not well-integrated members of the local community. These concerns demonstrate how even the local community field in which dairy farming takes place is undergoing change and with it the symbolic capital, for instance, also changes – as therefore do the 'rules of the game'.

2.3 'Good farming', national mythologies, and sense of place

Farmer practices and ideas about what constitutes 'good farming' are also shaped by aspects of competing national mythologies (Stock, 2007: 83). Loveridge (2004: 265) argues that rural New Zealand holds what she calls "an iconic place in our national identity, drawing on stories of pioneering heroism and intimacy with nature" to sustain a sense of unique place. Ideas about 'rural arcadia' contribute to New Zealanders' ideal about the country being a great place to live in. Many of the farmers spoke about the "awesome fact" that their children have exposure to outside life, to the quietness of the country, to a healthy and clean lifestyle, to the space afforded by a farm "which is clean and green and looks the part" (organic practitioner), all of which add to their sense of wellbeing.

New Zealand's national mythology still revolves "around 'men's confrontation with nature' as the norm" (Loveridge, 2004: 266), and images of the 'southern man' have been used to construct socio-cultural farmer identities as masculine, often isolationist, engaged in the significant task of caring for the land in order to care for people in the present and in the future (Campbell et al., 2006; Law et al., 1999). These notions are similar to those American agricultural myths revolving around "the farmer as steward and caretaker, not only of the land, but of the nation itself" (Stock, 2007: 88).

Farm autobiographies of local farming couples emphasise the value of hard work, of overcoming physical and economic hardships particularly through periods of economic downturn, and of the construction of local farming communities through "the melting pot of pioneering endeavour" (Loveridge, 2004: 265). These beliefs are part of a particular set of dispositions referred to as "the stoic values ... patience, courage, the ability to manage" (Wevers, quoted in Morris, 2004: 291), which have appeared to be particularly important for rural women.

The changing discourse of wellbeing from an understanding of a generalised pleasant feeling, to an ideal which now appears able to be actively produced through personal and responsible choices made by individual agents, has been traced by Eva Sointu (2005). Wellbeing is increasingly related to dominant social ideals of self-reflection and self-development which Sointu (2005: 262) claims are "deeply ingrained within western subjectivity". Inward looking selves turn to so-called 'experts' who define the 'normal' ways that individuals should be living their lives, so that self-responsibility becomes the norm, and at the same time "the primary means of governing individuals characterised by autonomy and freedom" (Sointu, 2005: 262).

Wellbeing has also been described conceptually as incorporating “an expectation and sense of health, satisfaction and happiness that allows individuals to interact with the world around them” (McKinnon, 2004: 52). Participation in civil life, having friends, loving and being loved, these are said to be part of the actualisation of human potential, according to Bruni and Porta (2005). This confirms that wellbeing requires active participation, as needing to be worked towards being sustained.

These ideas reflect those of Bourdieu in terms of the active construction of farmer-to-farmer networks discussed by Kate Mailfert (2006) as needed in order for people to gain access to resources. Elsewhere Demerath (2005: 17) has written about the sense of fulfilment human beings experience when they collaboratively interpret shared experiences. In so doing she argues human beings are engaging in the very processes of creating and recreating their culture. Given the New Zealand context of this project, such culture appears predominantly masculine. Campbell et al. (2006) have written recently of the emergence of a new type of masculinity in rural areas of the United States. This masculinity is described as being based around sustainability, working with nature, and collaborating with other farmers (Campbell et al., 2006: xi). Material from this project suggests that gender plays a significant part in the persistence of agricultural mythologies, and merits further study.

Demerath (2005: 1) argues that a decline of social capital is a source of the paradox of the modern age: “as countries increase in material wealth, there appear to be corresponding decreases in life satisfaction and subjective wellbeing”. However, the incidence of subjective wellbeing is relatively high in the New Zealand context judging by a World Values Study in 2005 where 38.1 percent of New Zealanders said that they were ‘very happy’; and 58.9 percent reported being ‘quite happy’. The author (Howden-Chapman, in Bone, 2006: 16) of this study quotes New Zealanders as saying that “they did not want economic growth at any cost; they wanted economic growth balanced against environmental factors and income inequality”. This growing concern for environmental values and the wellbeing those New Zealanders participants see this as engendering, appears closely associated with New Zealanders’ sense of place, both as a small country relatively isolated on the Pacific rim, and in terms of national identity which Law et al. (1999: 204) argue is defined “in terms of rural life, despite the fact that most people live in the towns and cities”.

2.4 Relevant issues explored through a review of the literature

2.4.1 A history of changing and competing environmental values

In their review of the processes influencing environmental land management today Valentine et al. (2007: 313) describe the patterns of changing attitudes towards land management by people involved in decision making since the pioneering agriculturalists, first outlined by Bawden (1987, quoted in Valentine et al., 2007). Likewise, Stuart and Campbell (2004) have discussed the patterns of technology crisis and conflicts which have characterised the history of New Zealand agriculture, most recently the issues of genetic modification and organic production. While Stuart and Campbell (2004: 237) discuss the significant political relationships between industry, science and government which secure or deter pathways of land management practice, and the ‘public good/industry good’ dimensions of such conflict, Valentine et al. (2007: 315) argue that motivation for change of practice often hinges on the balance of ‘private good/public good’ to individual land managers.

Although early Maori settlers had realised that they needed to be resource conservative (Valentine et al., 2007), European settlers established farms with little regard for, or knowledge about, environmental effects. Their ‘pioneer phase’ was clearly exploitative of land management as agriculture developed from being basically subsistence into a major source of export earning. With the arrival of refrigeration and improved communication

systems, New Zealand entered a 'production phase' where farmers were supported and informed by agricultural advisors about the latest ideas to increase or improve yields. The government backed programmes of 'research, extension and education', and during this phase "environmental issues were part of progress and seen as problems that needed solutions" (Valentine et al., 2007: 313).

When large pastoral farms were broken up and more intensive family farms became more usual, evidence of declining soil fertility became obvious. Initial inputs of lime and fertiliser from local slaughter houses were superseded by imported synthetic fertilisers and the increasing use of mechanical technology. Stuart and Campbell (2004: 228) argue that:

... in the 1930s and 1940s, agriculture continued its steady move towards industrialised practice, backed by the combined forces of commercial (fertiliser) interest, State, and a reductionist science that assumed an engineering and in-put approach to life processes.

Not everyone shared the reductionist views, and there were moves throughout western nations to develop alternative directions of better practice in human-nature relationships, such as the bio-dynamic approach developed by Rudolf Steiner in Germany. Concern about national health and diet in particular had raised awareness about the connections between soil, plant and animal health, resulting in the launching of the first organics society - the Humic Compost Club - in New Zealand in 1941. The initial goals of promoting better health, improving and sustaining soil fertility in ways which conserve resources and lessen waste, and reduce household and national dependence on foreign trade (Stuart and Campbell, 2004: 230) suggest the desire to become self sufficient, to develop an identity distinct from Britain, and to conserve the unique New Zealand environment. Although there has not been any analysis of the membership of this club – renamed the Soil Association and now a respected certifying body for organic production – to see if farmers were particularly interested in its early days, its influence remained significant at the level of individual households throughout New Zealand, and it was to become a significant resource during the 1970s and beyond when alternative discourses concerning organics emerged.

After the Second World War, as the country's productivity focus increased, characterised by a focus on maximising resource use efficiency, the organics movement failed to gain mainstream acceptance. While the country shifted towards a 'free market' orientation, government subsidies and incentives were gradually removed, and research and extension services downsized to the extent that agricultural knowledge and information became commercialised. Valentine et al. (2007: 313) argue that this packaging of agricultural information into a commodity represented a "shift from a 'technology push' to a 'demand pull' for information and greater responsibility from the client". The growing realisation that the quality of the very resources used in agricultural production had seriously declined raised concerns about the sustainability of our farming systems, and the nation moved to an 'ecological phase'. It became obvious that as the issues moved beyond individual farms "to include catchment and landscape impacts and involve the wider community" (Valentine et al., 2007: 313), the issues for individual land managers became much more complex.

The current active approach to managing land is accompanied by a shift from viewing farmers as individual producers, to understanding them as citizens concerned with the good of the community, including issues to do with the environment. Growing consumer interest has added to the push for sustainable land management. There are several local and regional organisations active in emphasising the desirability of environmental management to attract consumer demand, and Mairi Jay (2007: 276) describes the fledgling development of a Farm Environment Award, which emphasises long term management of a farm as a social and biophysical entity, as one such example. Jay (2007: 276) suggests that the very existence of such an award may suggest that consumer concern and market driven competition may be impacting on the environmental behaviour of some dairy farmers in New

Zealand. It may also demonstrate the possibility of the co-existence of the values of production efficiency, environmental care, and long-term stewardship.

However, individual farmers have to make many everyday choices sometimes based on narrow solutions that do not always include a holistic environmental view. The agricultural agencies farmers deal with tend to be special purpose, resulting in an approach Jay (2007: 274) has described as “fragmented”; and some farmers still see compliance with regulations of local or regional governments as an unnecessary hassle. As Valentine et al. (2007: 314) argue, environmental benefits for individual farmers are “often remote in both time and space”, and “costs of environmental practices cannot be offset against economic benefits”. Awareness of environmental degradation is not always immediately apparent on or off farm, and changes in soils may take decades to occur.

2.4.2 Organic or conventional methods: typologies of farmer practice

Analysis of the interview data indicate that individual dairy farmers can best be described as existing on a continuum of farmers who have “different techniques, styles, philosophies, judgements and justifications” (Stock, 2007: 83) for the practices they prefer. Similar to motivations for farmer practice in the United States Midwest (Stock, 2007) and in Austria (Darnhofer et al., 2005: 40) there are a number of different reasons why dairy farmers choose to practice in a particular way.

Darnhofer et al. (2005) and Fairweather (1999) have categorised farmers’ choices between organic and conventional methods, and demonstrate useful ways of thinking about degrees of emphasis given by individual farmers on particular aspects of their practice that they find meaningful. From a study of farmers’ practice John Fairweather (1999) has described the variety of motivations which influenced their decision making, ordering organic producers into typologies of ‘committed organic’ and ‘pragmatic organic’.

Fairweather describes as “reasonably obvious” those motivations for the choice of organic practice such as holistic philosophies, concern about the risk produced by chemicals in food, or for reasons of personal health such as reaction to chemical spray drift. Other motivations, such as the existence of the premium offered for organic products or problems with conventional methods, were not seen as so obvious. Like the farmers in this project, some farmers had become concerned for the purity of soil, and presented an active dislike, even a suspicion of, the constant use of chemicals. Some of the farmers in Fairweather’s study likened organic farming to what they called the ‘traditional’ methods used by their fathers and grandfathers. This sense of nostalgia among organic practitioners was present in the interviews for this project, but it tended to be spoken of in the sense of guiding a decision to practice in a particular way rather than the sense of returning to those methods uncritically.

Fairweather’s ‘committed organic’ farmers have much in common with the group of artisanal organic producers studied by Paul Stock (2007). Stock (2007: 84) describes smaller scale, artisanal organic farming as “representing the most obvious example of alternative agriculture to the general public” who have become increasingly conscious of food safety in terms of general health. The corresponding bond between producers and consumers appears to mark an ideological shift depicting “the history of organic farming as being opposed to the *status quo* of conventional agriculture by attempting to downsize and localise agriculture” (Stock, 2007: 86). Such arguments resonate with talk from organic practitioners in this project about their desire to produce for their local communities, and as against what they see as the “worrying trend” towards the creation of larger dairy farms. Their sense of creativity and personal satisfaction that ‘what they are doing is right’ also hinges on a perceived appreciation from the consumers of their product.

Using similar research methods to Fairweather (1999), Darnhofer et al. (2005) sought to provide a detailed picture of farmers’ decision making processes in Austria. Four groups of

farmer motivations identified by Darnhofer et al. (2005) are similar to those identified by Fairweather (1999). The groups are 'committed organic', 'pragmatic organic', 'pragmatic conventional' and 'committed conventional'. Darnhofer et al. (2005) also identified a fifth group 'environmentally conscious but not organic', a category which is interesting as it identifies the group of farmers who believe that sustainable agriculture is not necessarily produced through organic practice.

This factor has also been discussed by Bell et al. (2006) in an exploration of the reasons why more farmers in the United States do not take up sustainable agriculture. Bell et al. (2006: 13) claim that the arguments commonly given - that farmers do not like change; or that the structure of agriculture (technology, market forces, the raft of regulations) makes it difficult to change - do not constitute the full story. They discuss the factors of risk continually faced by farmers, and the steady decline in or disruption of rural communities, arguing that other reasons are equally significant. These include matters of knowledge, and its relationship to farmer identity (Bell et al., 2006: 14). Their discussion of the taken-for-granted stocks of knowledge learnt within culture, and from people with whom farmers are closely connected, resembles Bourdieu's ideas of social capital. It also raises the crucial element of trust in the social relations of farming, and the disruption to one's beliefs to change methods of practice. As Bell et al. claim (2006: 15):

Knowledge is people. It ties us to some, and often disconnects us from still others ... with identification with knowledge comes a sense of trust in it and those we received the knowledge from ... to give up a cultivation of knowledge, to give up a field of knowing and relating, is to give up both a field of self and its social affiliations and a field of trust in the secure workings of the world.

Returning to individual farmer motivations for practice, both Fairweather (1999) and Darnhofer et al. (2005) argue that the main goal of 'committed organic' farmers is to remain true to a philosophical ideal even if it means reducing the chance of making a profit. As Darnhofer et al. (2005: 48) claim, for these farmers "organic farming cannot be reduced to a set of techniques and practices; it is also a social movement and a political statement". Such farmers reject synthetic fertilisers and chemical pesticides, and will adapt or willingly change their management practices to solve any problems they might face. These ideas were certainly similar to the farmers in this project who talked about their organic philosophies affecting the way the families live their everyday lives. These farmers described their philosophies as being "holistic", as giving "an added dimension" to their farming practices, and as linked to wellbeing.

I would say that things are really values based. And one of the real things that people have wrong at the moment is that most of their comparisons are based on earning capacity ... rather than a whole lot of other values about self employment and doing things you enjoy rather than doing things for other people (organic practitioner).

Material from this project demonstrated that dairy farmers who were using organic practices for more pragmatic reasons tended to see organic management as offering a good prospect for a healthy income, especially if offered a premium as compensation for their changing to organic production. The farmers viewed incentives as an opportunity for extending their skills and gaining new knowledge and as Darnhofer et al. (2005: 48) argue, "as supporting the search for more satisfying work". In this project, several of the farmers spoke of looking for more satisfying ways to 'do' dairy farming. The farmers who tended to be more 'pragmatic organic' also took risks in knowing that they have to deal with practices which involve considerable time such as grubbing thistles by hand, instead of spraying. They spoke of being disposed to extend their knowledge and to learn new skills 'on the job'. Like those farmers who were 'committed organic' these farmers spoke of being happy about meeting certification standards and regulations as they see this as not only adding to the

integrity of their products, but also as guaranteeing them the premium needed to give them a decent living.

As organic practitioners, dairy farmers need to plan for the year ahead, a task which tends to be challenging for farmers who are more 'pragmatic' than 'committed organic'. One of the more pragmatic organic practitioners in this project talked about looking for ways to mainstream organics in order to replicate the support services which are currently in place for conventional dairy farmers. His understanding that mainstreaming an activity would provide more support and services differs from those understandings of more 'committed organic' farmers who tend to regard themselves as pioneers, as seeking new and different ways of managing land.

Many of the more pragmatic organic farmers in this study had been motivated to change from using conventional methods through seeing results attributed to organic methods, such as animals more resilient to ill health. They tended to come from farming backgrounds where things were done in certain ways to conserve rather than damage the environment and this had already disposed them towards organic practice. Fairweather (1999: 60) argued that some farmers in his typology of 'pragmatic organic' had become aware of the shortcomings of conventional production, or suspicious about chemical use after personal ill health or that of a family member. Several farmers in this study spoke of such experiences of illness, one specifically through exposure to chemical spray drift, which had confirmed his suspicions that chemical overuse was unsafe.

Likewise, those farmers who are 'pragmatic conventional' (Fairweather, 1999; Darnhofer et al., 2005) have not dismissed conversion to organic altogether. Material from this project illustrated that there are farmers who see changing to organic methods as carrying a significant economic risk, but they are interested enough to watch the effects of organic practices closely, like the farmer below who may well be persuaded to change:

[I am] quite interested in organic as hearing talk about facial eczema being absent from guys using organic practices and no additives so I feel this has got to be something to do with fertiliser application (conventional practitioner).

Darnhofer et al. (2005) argued that farmers who identified most easily with this group of 'pragmatic conventional' may be more amenable to conversion once markets for organic produce have been more established. However, these farmers are also convinced that conversion involves substantial risk in terms of regulatory constraints and certification processes, and that they would face significant technical challenges. Several farmers in this project whose practice was more 'pragmatic conventional' spoke about their desire to provide a better balance in their lives - that they "see farming as a business, but as a lifestyle for that business" (conventional practitioner). Because any profit tended to be ploughed back into the farm rather than spent on the home or holidays, they were searching for practices that would make farming more attractive and provide more time for them to be with their families and involved in other activities.

In his typology, Fairweather (1999) argues that conventional farmers tend to associate 'good farming' with tidy farms. Many of the pragmatic and committed conventional farmers in this project emphasised the desirability of 'tidy' farms. Farmers who fit into Fairweather's (1999: 47) 'committed conventional' group are characterised "by not even considering a conversion to organic farming". In their view, and in the view of the more committed conventional dairy farmers in this project, organic methods are not environmentally friendly. Their focus remains on productivity, and they are prepared to take large risks in terms of borrowing funds to extend this, their ability to borrow being influenced by the rise in land values. The idea that organic is associated with old fashioned civility and concern, and is correspondingly

unrealistic compared to modern methods, remains strong among practitioners committed to conventional practice, such as the farmer quoted below:

The bottom line for me is productivity ... [it's] all very well being kind to every other person in the community and the environment ... but if I still can't make money, well the whole thing falls over (conventional practitioner).¹

These practitioners may no longer use a high amount of fertiliser, and may talk about the timing of fertiliser use being crucial to its effect, but they see organic practices as being restrictive and limited: "... by refuge in the organic farm ... well, that is totally down the opposite track" (conventional practitioner). This does not mean that farmers who are more 'committed conventional' do not have the same appreciation of factors similar to those of organic practitioners. In this project the farmers who were more 'committed conventional' spoke freely about their caring for their land, and their sense of living a life which was meaningful. As one of the farmers in this project said:

Doing the complete job on the farm is a beautiful way to run your life – makes people feel as though they belong to a property and enjoy the property which is very important in a farmer's life (conventional practitioner).

This expression of belonging to, and enjoying the land was referred to constantly by all the farmers in this project. They were all enthusiastic about ideas such as clean water and the planting of natives. They each emphasised meeting the requirements of regional and local councils for clean water and native planting and, in cases where family farms are shared, talked about having to convince older farmers that planting natives is preferable to using every square metre as pasture. One farmer who was more 'committed conventional' spoke of being surprised by the amount of personal satisfaction he felt once his waterways had been cleaned up and fenced, and he had completed a planting programme of native trees. Not only had he not expected to feel good about spending money in this way, but it had proved advantageous in terms of easier management of stock, without any loss of production, which surprised him.

2.4.3 Farmer knowledge bases and networks

One aspect of 'good farming' is the understanding that farmers have access, and contribute to, networks of shared information and knowledge. The prevalence of community collaboration and mutual support among dairy farmers in New Zealand has been described as significant, and as "expected and normal" (Sligo and Massey, 2006: 15). Sligo and Massey (2006: 14) write that farmers work:

... with multiple layers of institutional forms, ranging from interactions with consulting officers paid from farmer levies, with members of veterinary practices, farm discussion groups, seed and animal remedy merchants, groups that exist to lobby government, quality associations, friendship association and others, all of which affect their economic and social sustenance.

Although many dairy farmers in this project spoke of their valuing the 'lifestyle' farming allows them with the freedom to make their own decisions, their individuality is tempered by their sense of collective and community responsibility. Nearly all the farmers in this project were currently, or had previously been involved in community organisations such as school boards, coaching or playing with local sports teams, or church organisations. Despite the benefits they received through effective local systems of mutual advice and support, the farmers in this project were clear that a lot of their everyday learning was done through sensory means, especially with regard to personal observation. For those farmers practising

¹ This quote appears in full in Section 3.2.2.

organic methods specific knowledge may not be as easily accessible, or as necessary as has been thought for conventional farmers, as this farmer explains:

When a problem arises it teaches us to actually think outside the square a bit more ... by reading and bouncing ideas of other guys in the same sector and by observing our own property ... most of these problems we can rectify ourselves rather than get advice from - I suppose - fertiliser reps and vets and people like that (organic practitioner).

2.5 Summary and conclusion

This chapter has interwoven the work of others with some of the findings from this project. It has demonstrated how the ideas of Bourdieu can be linked to the practices of dairy farming. In particular ARGOS dairy farmers used their unconscious knowledge or habitus of 'how' to farm, and how this habitus and human capital enabled them to 'play the game' of dairy farming in the dairy sector. Farming is closely linked to New Zealanders' sense of national identity and as such has helped to form the habitus of each farmer and their awareness and use of their human capital; in particular the symbolic capital gained from this activity of farming contributes to farmers' sense of wellbeing. The use of land for farming and its impact on the environment is increasingly being challenged and is reflected in the views of organic farming practitioners who feel that 'what they are doing is right' and that it addresses the concerns of the mainly urban populace of New Zealand.

Typologies of farmers, particularly the committed and pragmatic organic and conventional practitioners, are easily recognised within the dairy farmers in the ARGOS project. This also demonstrates (as Darnhofer has suggested) that the most likely farmers to next take up organic practices are likely to come from the ranks of those who are presently exhibiting the characteristics of the pragmatic conventional typology, who are carefully watching organic farmers to see what they do and how well they will go.

This combination of literature and data can be seen through a Bourdieuan lens. As a new field of organic dairy farming grows with its associated social capital infrastructure support networks (such as suppliers of organic feed, fertilisers and calves, discussion groups, vets interested in homeopathy, organic remedies and other 'organically certified treatments' etc.) some farmers will be able to see how the values and feelings associated with their habitus can translate into new practices. Alongside this, is the growing environmental awareness apparent in the 'New Zealand identity' field linked to the concern that New Zealand is seen to be 'clean and green'. Farming organically could come to be perceived as a possibility that can be rewarded not only with economic capital but also symbolic capital, thus giving farmers a continuing, if not increased, sense of wellbeing, reducing the sense of risk associated with making such a change.

Chapter 3: Linking wellbeing and sustainable practices

3.1 Introduction

What do dairy farmers of all practices think is important for their wellbeing as farmers in relation to sustainable environmental practices? Although far from being a homogenous group, they share two significant values in common. Firstly, all the dairy farmers see themselves as *kaitiaki*, and secondly, their autonomy is very significant to them. They also share the importance to their farming practice of the visual feedback received from their farms and those of their neighbours. With regard to their environmental actions farmers could be seen as fitting on a continuum from proactivity to a more passive role in which they sought to do no harm. The role of cows in farmer's wellbeing is then described and the chapter concludes with a consideration of what disturbs wellbeing.

3.2 Shared values

3.2.1 Being *kaitiaki*

Kaitiaki, or being knowledgeable guardians and caretakers of the land for the generations to come is a significant part of dairy farmers' identities as 'good farmers'. The quotations below illustrate the weaving together of these values and personal aspirations with practice in the bigger picture of 'good farming' in the New Zealand context:

Farming is not about how big, how huge [your farming operation is]. It is your chance to own your bit of New Zealand and have your own bit of dirt to look after ... and to have something to hand onto the next generation that is in a good healthy state (organic practitioner).

We are really happy ourselves doing it that way and I think if you are conditioning the place and looking after the farm and the soils for the next generation and by doing it that way which was done prior to us taking over ... we are happy where we are at (conventional practitioner).

Such expressions of moral care associated with good farming practices demonstrate these farmers' implicit acceptance of both ecological and social responsibility. The overriding impression of reading the interviews was the farmers' sense of the need for their land to be sustainable; the differences occurred in how that could be best achieved.

3.2.2 Being autonomous

All the dairy farmers talked about the sense of freedom they feel they have to exercise their own choices, not only about which practices they choose to manage their land, but also about their choice to be self employed. The sense of being free to choose what one did in a day, of being one's own boss, was mentioned by many farmers as contributing to their sense of wellbeing, as illustrated by the quotations below:

Being your own boss ... I suppose that's the main thing ... and I've got pride in the place and you do, well I hope I don't sound corny, but you're not in love with it but you know it's yours and it's your block of land and you're in control of it (conventional practitioner).

No boss, nobody to worry about, I just really enjoy the cows - always have. Although there is a tie, there is also the freedom of not having to be anywhere at an exact time which is a big bonus (organic practitioner).

Although tied to milking twice daily every day, farmers saw their freedom to use their daylight hours in whatever way they decided, as a significant bonus. Farmers or their families could be, and often were, involved in local community tasks such as coaching sports teams, or working with local schools. They talked about having time to put into a "tidy farm", meeting the challenge of wanting to produce more every time, and having time to learn through

talking to advisors, attending farmer groups, reading or searching the internet. As his hobby, a conventional practitioner kept a nursery of native trees ready to replace trees which had to be cut down.

The sense of freedom to practice in ways that they felt were right as individuals was also significant:

Honestly, I'd be on as a conventional farmer compared with organic farmers so I'd probably have a different mindset compared with the organic about what sustainability is ... the bottom line for me is profitability and so long as I can marry that in with sustainability, that's the most important thing because it's all very well being ... very kind to every other person in the community and the environment and everything, but if I still can't make money you know, well the whole thing falls over ... yeah (conventional practitioner).

3.2.3 Watching and experimenting

Looking, seeing, and watching are fundamental to everyday dairy farming practices, and to farmers' significant accumulation of knowledge. Dairy farming was seen as being about getting the soil right. If the soil is 'right' then the pasture "has guts", and if it "has guts" then it keeps the cows happy and healthy so they can provide milk which in turn provides income that feeds into the local and national communities. Soil is tested on a reasonably regular basis, but the farmers' talk was of the texture of their soil, the smell of it, the differing layers within a hole, the number of worms and the presence of worm castings, the depth of root penetration, if the roots appear to be fine, white and healthy, the presence of fungi or mites in the soil demonstrating healthy bacteria, or the presence of black beetles. They described the patches of grass grub damage, and whether seagulls or other birds appear when the soil is worked, as indicators of abundant worm life. They talked about the time it takes for cow pats to disappear from a particular paddock - quick disappearance is apparently a sign of healthy soil - and about the colour and diversity of the pasture grown from their soil. Diversity of pasture is very important to organic land management and the farmers committed to organic practices describe the presence of herbs and chicory, and of "clover coming back".

From observations of their own soil, and the pasture it produces, by watching both neighbouring farmer's results and the results of advisors at field-days, farmers are more likely to work out which practices suit them best and which new practices they are willing to engage in, as the farmer below described:

Well, we have seen the results ... I have done the share milking thing therefore I have seen the animal health costs. On the last farm I was share milking on, you know we had eighty dollar a cow per year animal health bills. Well that is just horrendous, not to mention the amount of milk fever and what have you that went on. Just this spring gone, I had a friend from over Fielding (who is now using the Probitas system) ring me up because he was having huge milk fever problems with cows down at calving, and he said, "How are you getting along?" I said, "Oh, no worries." He said, "Well, what are you doing?" I said, "Oh, that is easy. I am doing nothing," and he was like, "What!" ... he was doing everything under the sun ... I said, "Well look, if you are going to feed them candy floss they are never going to have enough energy to get up, if you can get the right grass into them and it has got energy and all the goodies in it, then ... it does not matter what it looks like, if you can get it right", and from that he came and had a look, actually, and he is now on this Probitas system too and he is loving it. He just texted me the other day - they are autumn calving. He said they have just had one hundred cows calve and not one cow with milk fever. He said (to me), "You might be on to something" (organic practitioner).

Unconstrained by the parameters imposed by organic certification, conventional practitioners can try out different practices. One of these farmers was fortunate enough to run two herds with which to experiment:

I used homeopathy in one herd to deal with the mating side of things ... and on the other herd I used the standard equipment ... whatever the vet said I did. And after that year there was

absolutely no difference in calving spread or empty rates between both mobs. So I said the homeopathy lot cost me a hundred dollars and the other lot cost over a thousand. So I mean it was fairly (easy) for me to make that decision (conventional practitioner).

3.3 Attitude to the environment: proactive or passive?

The two shared points outlined above illustrate the usefulness of seeing the results of the analysis as a continuum of differing senses and values held by the ARGOS dairy farmers. Other material analysed from the interviews indicates that the farmers who practice organic methods tend to be proactive in their emphasis on restoring the environment to health, whereas the emphasis of the farmers who practice conventional methods tends to be passive in terms of doing less harm to the environment.

3.3.1 Proactive care for the environment

Organic practitioners are more likely to talk about practices which enable them 'to work with' or 'to help' 'nature' as contributing to their sense of wellbeing as the following quotes from farmers illustrate:

You're working with the environment ... you try and work with nature, you know? Like if you can't beat it then that's how it's going to be ... You accept that (organic practitioner).

As farms go, it's probably not the ideal dairy farm but it's a great place to be, it's a pretty ideal place for bird life ... and possums and things too ... lots of insect life. There's a huge population of wasps and bees and flies and caterpillars, you know, we get the ones chewing on ragwort and not fast enough² ... I see lots of spiders crawling through, huge big butterflies where we're going to put our turnips in this year and so on ... At this point it's fair teeming with life which I think is a real positive side (organic practitioner).

In particular, organic practitioners talked about improving the soil in terms of restoring it to health:

The main thing we look for is the soil itself ... that was the first time we noticed on the farm - that we found some worm capsules so they were starting to breed so that was a good sign that the health of the soil was coming back (organic practitioner).

Also, they feel their practices are contributing to restoring species presumed lost:

The cat brought in a little frog but [name] rescued it ... put it in the bath and then we took it to a wet area ... and that was quite a good sized frog ... so they reckon they're starting to come back ... so we must be doing something right (organic practitioner).

Skinks – yes, I'd like to think they've come back because of what we're doing but I couldn't begin to prove it. We know what we're doing is right and we're just happy. We don't need to dig these holes in the paddock, or I'll measure this or I'll count that (female partner of organic farming couple, laughing).

The above quotes also demonstrate how organic practitioners search for signs to indicate and reinforce their common belief that 'they are doing something right'. This also means that they are disposed towards learning new ways of how to do things, and about alternative sciences such as homeopathy, in order to 'work with' and 'repair' the environment in ways that are supportive of the idea of living in harmony with, rather than having to impose control of, nature.

² This comment indicates that this farmer is using an insect – ragwort flea beetle, as a biocontrol of ragwort.

All organic practitioners placed a considerable value on their ability to provide a product which is safe and has integrity in addition to being good for the environment.

Probably being organic it is quite, well you feel like you are doing something that is good for the environment. And you're going to end up with a good product at the end that is good for everyone to eat ... to consume (organic practitioner).

We have to have integrity in what we are doing so that we have to do it (organic practitioner).

Some of the organic practitioners were explicit about their change of practice being after a period of personal ill health, or that of a family member, resulting from chemical poisoning such that caused by nitrates. They expressed their beliefs that their customers have a right to know where their food is produced, and their ideas to do with the moral care associated with 'good farming' and how private good relates to public good.

Those farmers who could be categorised as most 'committed organic' tend to see themselves as 'pioneers', not dissimilar to those Maori or European settlers who first farmed the land, but as belonging to a relatively small group of farmers who provide an alternative, innovative and safe product being sought by growing global markets, and contributing to the dairy industry's market 'edge'. Their reference to being pioneers does not mean their practices should mimic those of an earlier era, rather as one farmer said:

In a hundred years time the best practice may be something different. And so I do like to look after the environment ... but I always like to keep a wider view that the final best practice is not really known (organic practitioner).

The possession of the values discussed above translates into considerable human capital in terms of firstly, cultural capital where organic dairy farmers contribute to a provision of a culturally valued commodity ('safe' and desirable) for national and international markets where demand is increasing. They possess considerable economic capital in terms of the provision of premium prices for organic milk desired by the industry. They possess symbolic capital through their ability to liken themselves to those pioneers who began an agricultural industry so many years ago, and who occupy a special place in New Zealand rural ideals. At the same time, they see themselves as belonging to an elite group of farmers prepared to embrace innovative and 'new' ways of doing things. They also possess *social capital* through their association with organisations specific to organic practice, organisations whose acknowledgement of the value of organic practices and products is growing.

3.3.2 Making sure the environment comes to no harm

The farmer below gives a nice example of his passive approach to environmental wellbeing in terms of less chemical use, which he claims is going to benefit the environment.

I don't use a lot of chemicals, basically because I believe in eliminating the problems before they get big and (I have to) spend a lot of money ... I've just got a policy, if I eliminate a problem, I'm not going to use so much chemicals ... so [it's] going to be better off for the environment (conventional practitioner).

At different points on the continuum, farmers who practise conventionally are more likely to emphasise control of their environments as contributing to their wellbeing.

I pride myself on how well I run the farm and make it easier, like when I go and shut the cows in there's no string to untie the bloody gates ... there's a lot of farms out there, God they've been farming for thirty years and they're still tying up gates and have things lying around ... if I'm to walk around a farm I'd judge it by how well they are actually running the farm and how it's looking (conventional practitioner).

I get frustrated with neighbouring properties that are quite happy to have their ragwort blowing over all the time and to me that's an environmental disaster for me because I've got to spend a lot of money and a lot of time controlling these sorts of things ... but sustainability for controlling

something like that is quite important to me too. Also sustainability as far as, you know we talk about the environment and nutrients and all that sort of carry on, but it's also on farm stuff and on myself as well. I've got to create a job that I can keep doing year after year and that's probably some of the reasons there's changes over the years, to keep modifying my job to keep it exciting for me and still possible and building a bigger future (conventional practitioner).

The farmer quoted above talks about sustainability when he was speaking of his frustration at ragwort seeds blowing over his property from his neighbours, a situation which he feels is an environmental disaster for him. Just as there are farmer types, and differing ideas about managing their land, dairy farmers have differing ideas about the term 'sustainable'. A female partner of a farming couple said that for her, the key to sustainability was that there were always several ways to do something – a period of daily milking for her meant a way out from the house and children and a chance to look objectively at things, so she would not miss opportunities to be more efficient or more profitable. A conventional practitioner suggested that farmers were educated to be profitable rather than sustainable, and there should be easily accessible education on how to be sustainable.

Conventional farmers' possession of human capital in respect of sustainable practices is likely to be less than that of organic practitioners. They certainly possess economic capital, particularly in terms of production figures; and, as they form the much larger group of land management practitioners, they possess considerable social capital. Their contribution to changing environmental values resembles that of organic practitioners but is less active. The farmers claim that they use only as much fertiliser as they need, and that they are keen to clean up their waterways and meet the requirements of local bodies, but their primary focus is on profitability. This reduces their amount of symbolic and cultural capital in a national, environmentally oriented field but increases it in the field of the dairy sector where productivity is valued.

3.4 What disturbs a dairy farmer's sense of wellbeing?

3.4.1 Identity issues

Jay (2007) argues that alternative discourses are still marginalised. Material from the interview data illustrates the existence still of colourful stereotypes, and organic practitioners themselves are aware of what they call the "stigma that goes with the tree hugger" (organic practitioner). A conventional practitioner describing his opposition to organic management talked about his dislike of "... the mental attitude of organic farmers you know, they kind of associate with the green party ... you know - like jandal wearing, dreadlocks, and dope smoking" (conventional practitioner) and the implication that organic practitioners are not hard workers.

The following quotation illustrates the contradictory feelings present even among the farming couples practising organic land management:

Female: We're organic dairy farmers, we don't have a problem with that, and we're proud of it, aren't we?

Male: No, I'd say I'm a dairy farmer and just leave it at that. But, talking about farming, nine times out of ten the opportunity will arise in conversation where we mention the organic or we don't do it that way. Yeah, no, but I never say we're organic actually (organic farming couple).

When the farmers were asked about how they introduced themselves to other people, four of the twenty three farmers replied that they were "just" a dairy farmer. The conventional practitioner quoted below does not mention the phrase 'dirty dairying', but it appears implicit in his answer.

Some people who have asked that question ... they have just got this impression of dairy farmers. And so sometimes you just have to say, well I'm a dairy farmer in a very small voice, if you know what I mean.

3.4.2 The impact of the weather

Working with unpredictable weather can be seriously stressful for dairy farmers, and comment about weather was so pervasive through the interviews that it needs to be included in any discussion of wellbeing. For example, "I know that it's easy to be a reasonable farmer on a fine day like this. But to be a good farmer on a day when it's raining ..." (conventional practitioner). In fact, one farmer said to the interviewer that he 'farmed sunshine', which compared with ARGOS sheep/beef farmers in the South Island who saw themselves as 'farming the rain', a sparse commodity on the Canterbury Plains, in North Otago, in Marlborough and around Fairlie.

Even though a disposition towards nature as being something essential might be thought to make working with weather easier, the practitioner quoted next revealed his anxiety about what bad weather means for his practice when he said: "I have nightmares about mud and stuff like that, you know" (organic practitioner).

Bad weather is a shared adversity, and the farmer below explicitly links his feelings with those of his animals:

The thing that gets me, it's nothing to do with the farm, but the weather. When you get a real wet spell in the winter and all you're looking for is a couple of fine days and then you'll have a drought in the summer and just want a bit of rain. Sometimes I feel my emotions are tied to the weather. But when you go through a period when you've had reasonable growth and the cows are happy, you go to lock them away and they don't moo at you and there's a few lying down ... they've been a bit unsettled with this wet weather but the last few days they have been happy and that makes you feel a bit better (conventional practitioner).

Cold weather, and especially cold wind, affects cows, so farmers regard the provision of shelter as essential.

Wind is a problem because it's cold ... cold for the animals, they do not like the wind. [They] turn their backs to the wind, and stand there. They do not eat (organic practitioner).

There were expressions of disbelief at the lack of shelter on the Canterbury plains, and expressions of distaste for a farmer who cut down hedging which could have provided shelter.

3.4.3 The role of cows in the wellbeing of dairy farmers

Some of the quotes in previous sections indicated how closely the wellbeing of farmers is intimately related to that of their cows. For example, in the previous section it was not the weather so much that was important but the impact of the weather on the cows because of how it affects feed quality. For 'good dairy farmers', cows are to be watched as closely as the soil: "I believe every time you drive past your cows or whatever you should be looking at them" (conventional practitioner). If a cow becomes lame:

... this means the environment I'm running here is not right ... the management of the farm is also part of it. Just the environment which we run the herd in ... the way we would keep them, the way we rush them or don't rush them along the race is important too (conventional practitioner).

Some of these practitioners talk about loving their cows, as having an affinity with them. The farmers say that understanding of and attention to their cows' health and happiness can mean less stress for farmers. Two of the farmers mentioned that if "they were not chasing cows they were more relaxed" (organic practitioner). Keeping their cows happy means

paying attention to the soil, which all dairy farmers need to do, but to organic practitioners this does not mean growth in pasture only as illustrated by the farmer below:

I think if you listened to your cows ... if they're happy, then sure as bob you're happy ... you put them in the wrong grass, they might not be happy ... even the other day they were gutted or upset, but it was just the pasture. It's a new grass paddock and it was raining and they just needed more (organic practitioner).

Several of the farmers who use organic methods spoke of doing less harm to animals and living happily with the implications, instead of attempting to control what was natural to their animals: "We have not done any inductions for years; if I've got a cow that's calving late and I like her, I won't cull her; I do not dock tails, I never have". One farmer hinted that he no longer uses a piece of alkathene pipe to hit recalcitrant cows with, since he has been using organic practices (see quote in next section).

These farmers are also aware that using homeopathic methods requires a significant change in former thinking as this farmer below explains:

It's the whole confidence thing. Am I doing the right thing? Am I being cruel? Am I leaving this too long? Because that's one of the big perceptions I think (organic practitioner).

3.5 Risking change

A factor that also impacts positively and negatively on wellbeing is the risk that is engendered by change and hence the reluctance of farmers to change practices. Farmers who are strongly committed to either organic or conventional practice both take substantial but different risks. Those who practice organic management are prepared to earn less through achieving their philosophical goals, but they may have had to change the way they have farmed in the past, learning different knowledge bases. It may be exciting, even to the extent that according to one farmer a mentor advised him that "the way we are going - he says it is actually bringing the art back into agriculture" (organic practitioner), but it takes valuable time. Such farmers know they may have to cope with stigma, and bad weather for which no amount of year-ahead planning can prepare them.

They may also have to manage sick animals without conventional medication as the farmer below explains:

I think the difficult thing is dealing with sick animals, I hate it. They are hard to cure if they are really sick and they can't talk to you and you are guessing, and in homeopathy you are guessing that much more because we're not that great at it ... and a sick cow, especially a down cow really upsets me because the chances of getting them up on their feet are quite minimal (organic practitioner).

Yet the female partner of an organic farming couple describes how her investment in new knowledge systems had proved beneficial to both herself and the animals she worked with:

... to learning a whole new science of homeopathy. It's just a totally different way of thinking ... don't close your mind to anything, [you've] got to try it - the plantain and the dock leaf and the bandage with the honey. We've tried that and it's wonderful for foot rot and things (female partner of organic farming couple).

Their resilience to risk seemed bolstered through their disposition to trust in their philosophical beliefs, and their emphasis on the human-nature relationship. As the organic farmer below explains:

On a personal note I think the biggest change has been in me. I just used to be a farmer and milk cows and didn't really give too much [thought to it]. You know I've grown phenomenally. There is often a bit of alkathene close at hand. But now it's - even on a bad day - it's a genuine

concern for the cows and the satisfaction of walking round the farm and your belief that you are doing the right thing, you know, whether it's the trees you've planted or the clear water in the drains (organic practitioner).

On the other hand, material from the interviews indicated that conventional practitioners were more inclined to be risk averse. Although a few of the farmers were prepared to take risks in terms of borrowing money heavily, usually to produce more milk, through better or more efficient use of inputs or through the purchase of other land and bigger herds, most of the conventional farmers were more likely to agree with the practitioner who said "I probably farm safe". These practitioners do not want to take unnecessary risks unless they have been shown that spending money in a certain way will work for them financially.

3.6 Summary and discussion

Whether conventional or organic practitioners all dairy farmers interviewed were concerned that they exercised stewardship over the land they farmed so that it was passed on to the next generation in a healthy state. They also saw the lifestyle offered by dairying as being one in which they could freely exercise their daily autonomy to do what was 'right' to them, and this was extremely important to them. In this sense they closely observed their soil, pasture growth, cows and other farmers, particularly neighbours.

However, the autonomy of the farming lifestyle and the observations related to farming practices were incorporated into environmental practices by farmers on a continuum ranging from those farmers who wished to control things that were seen by them to impact negatively on the farm environment such as weeds and general untidiness, or tried to make sure that the environment came to no harm, to those farmers who wished to proactively work with the environment or to change their practices to make the environment 'better'. The feelings attached to doing these things obviously increased farmers sense of their own wellbeing. It helped them feel that they were living meaningful lives, giving them a sense of undertaking something for the good of people and the land beyond themselves.

This sense of wellbeing could also be easily disturbed. Organic farmers were still characterised by some conventional farmers using some old stereotypes and this conflicted with the identities organic farmers saw themselves as having. Similarly, the automatic association of dairy farmers with the slogan 'dirty dairying' also impacted on farmers' identities as dairy farmers did not see themselves as involved in such negative practices and many expressed pride in the quality of their streams.

Weather affected feed quality and the soil and therefore the happiness of the cows. In this sense cows could be seen as the result of the consubstantiation of the farmers with their land, just as sheep were seen in this way by Gray (1998) in his description of crofting in Scotland. The implications of this close relationship between farmers and cows and its impact on farmer wellbeing and environmental sustainability will be discussed in the next and final chapter.

There was also a risk entailed in taking on different practices with some farmers speaking of the stress of working with sick animals when they did not know how to treat them according to organic principles. However, others spoke of the transformation in themselves for what they felt was the 'better' as a result of making the change to organic practices. Conventional farmers were more prepared to take the more conventional risks of borrowing large amounts of money.

This chapter has illustrated that it is possible for farmers to associate environmental care with their own wellbeing, yet it is also clear that other things may get in the way of this happening. The following and final chapter will place these things in an overall perspective.

Chapter 4: Discussion and conclusion

4.1 Introduction

Material from the interviews shows a strong relationship between the ARGOS dairy farmers' sense of wellbeing as farmers and the use of practices they see as environmentally sustainable. Such opinions are reflected through individual farmer's everyday practices which ranged from being actively involved in sustainable practices to the more passive stance taken by those practitioners more committed to conventional practice. In turn, these are influenced by the dispositions of individual farmers.

4.2 Linking farmer wellbeing and environmental sustainability

Although organic dairy farmers see their land management practices as 'better' than other methods in terms of environmental sustainability, conventional practitioners do not see them as necessarily sustainable at all. New Zealand now has a Ministry for the Environment whose website defines sustainability as a practice of making things continue indefinitely. It claims that 'sustainability is not environmentalism in disguise and does not mean suppressing business innovation, or reigning in economic growth' – rather its focus is "on encouraging and rewarding businesses with sustainable practices, rather than punishing businesses that don't comply" (www.mfe.govt.nz/sustainable/issues-industry). This is interesting language which illustrates the nub of the issues for some of the dairy farmers. Conventional practitioners are more likely to associate organic practitioners with simplistic and nostalgic stereotypes of 'jandal wearing tree huggers' rather than successful, innovative business people.

These differences in understanding are reminiscent to those found in the study by Raedeke et al. (2003) of agroforestry, a practice of growing trees and crops together in ways which are seen as alternative to conventional farming systems. Raedeke et al. (2003: 69) argued that an examination of the habitus of farming offers a way to explore the taken-for-granted logic that makes the practice of farming possible, and their research revealed an interesting difference between types of practice. Whereas farmers saw farming as actively 'working the land', they understood forestry as 'management of trees'. They did not view trees as a 'crop'. These differences had implications for their negotiations with various actors from the fields of the timber industry. While this is a different aspect of farming than the various forms of land management use by the dairy farmers, it nevertheless offers a useful way to assess farming practices. Findings from the study reported here also highlight that undertaking alternative forms of farming means investing in new knowledge systems, new technologies, and different sets of social relations – all of which may impact on various forms of capital held by individual farmers. This raises the significant issue of risk and risk taking which has implications for wellbeing of all farmer types.

Other authors have argued that the preoccupation with production is still a major element in the discourse of dairy farmers today (e.g., Jay, 2007; Valentine et al., 2007), restricting the focus on sustainable practices. In a recent study of five dairy farming families Jay (2007) describes the pride the farmers felt about their production figures, and their desire to maintain them. Jay (2007: 270) argues that production can be viewed as "an ethical good, requiring a high degree of emotional commitment beyond the calculus of profit and economic reasoning". Drawing upon the material explored for this project, high levels of production certainly generate confidence in a farmer's chosen method. However, when asked about what influenced their wellbeing, several farmers spoke about viewing the season as a whole in terms of good or not so good, rather than in terms of their figures of production only. Their

answers to the interview questions showed that dairy farmers think reflexively about their work, the industry they supply, and their potential customers.

4.3 Supporting links between wellbeing and sustainability

4.3.1 The problem of cows

The importance farmers in this study placed on 'happy' cows and how they linked this to their own wellbeing has major implications for attempting to place a priority on improving environmentally sustainable practices. If the highest priority is placed on having cows fed with good quality feed then this will need to be positioned alongside the requirements for this feed to be supplied in an environmentally sustainable way which may mean stocking rates could need to be reduced. We do not know how stocking rates are decided upon and of course, a stocking rate that is sustainable at one point in the milking season may not be so at another point. It is also obviously related to the skill of the farmer in feed allocation, pasture production and planning. (We are aware that there is already software available to help farmers do this.) It may require lower stocking rates on hilly areas more prone to erosion and the use of stock pads during bad weather to reduce soil pugging. Many farmers already follow these practices.

4.3.2 Building sustainable thinking into everyday practices

Fonterra, New Zealand's giant dairy cooperative, sees that there is a market for organic milk and as a result is offering farmers willing to convert to organic a premium for their milk over the years it takes to become certified organic and the promise of higher returns after that. This is an opportunity for a concern about improving environmental outcomes in dairy farming to be built into everyday farming practices. However, farmers have been slow to take up this opportunity. This study was to find out if there was evidence to indicate that care of the environment was linked to farmers' wellbeing and if so, if this indicated how this could be built into everyday practice and encouraged and supported for other farmers. In other words, how could a 'feel good' factor about environmental care be built into farmers' practices? Could making a farm more environmentally sustainable become part of living a more meaningful life?

We thought that Bourdieu's 'Theory of practice' (1998, 1990) would be a useful theoretical framework to work with so where does this theory lead us? How could the accumulation and maintenance of human capital be supported in the way fields are structured to empower and encourage environmental sustainability?

Dairy farmers could be viewed as operating within various fields: the dairy sector with its emphasis on production, the farming community with its discourse of what makes a 'good' farmer, and the field of New Zealand identity. New Zealanders have an historical attachment to agriculture as part of their national identity and this attachment potentially could conflict with notions of New Zealand as 'clean and green' as happened when dairy farming was labelled 'dirty dairying'. The habitus of conventional farmers – their immersion in family, and community, their way of being, their tendency or disposition towards certain behaviour or practice contributes to their human capital as it determines their knowledge of 'how to play the game' in their communities and in the dairy sector. For example, they possess the social capital to give them access to the knowledge and networks required to gain information about dairy farming and the economic capital which provides them with the money that makes it possible for them to farm and provide for their families. Hence they know how to achieve the symbolic, social and economic capital essential to their wellbeing. On the other hand, if a farmer is to take the risk of becoming an organic practitioner they have a whole

new game to learn, a whole new organic sector to negotiate – one which will challenge their identity and wellbeing unless they already have qualities as part of their habitus which already dispose them towards doing something a bit different that does not fit within their community's and the dairy sector's rules of the game which identify them as 'good farmers'. Such qualities may be the willingness to be problem solvers, learners, pioneers, 'different' and to form new networks. As the organic sector grows with its support networks of farmer groups, organic suppliers of fertiliser, replacement stock and other organic products, vets prepared to practice alternative medicine on cows and so on, more farmers may be prepared to take the risk. Also, as it grows, the practice of organic dairying is likely to become more acceptable and less 'unthinkable'.

So what can Fonterra do to empower farmers to move into organics? It could promote the legitimacy of organics through supporting the infrastructure required to farm organically. It is already thinking of using tankers labelled organic to indicate to farmers that organic milk is a going concern. It is making sure there are organic farmer groups and farm days, so setting up a network through which organic farmers can learn and mix with other farmers who will give them help and support and symbolic capital. There is support of the development and resourcing of feed and replacement herd supply. Fonterra is also attending to the economic capital of converting farmers by giving them a premium for their milk during the three years it takes to convert to organics.

However, there are some who argue that the premium is not sufficient to encourage more conversions. Such people are those who believe the only capital of importance to farmers is economic, whereas, as Bourdieu's theory demonstrates, wellbeing comes about through accumulating human capital in all its forms, not just economic. In some ways it would be simpler for Fonterra if all it had to do was give farmers a greater premium to become organic, but the story is more complex, as has been illustrated in this report. Nevertheless, by not paying a greater premium (and therefore 'saving money') Fonterra need to be aware of the complexity that makes up farmers' decision making and the many different ways this can be influenced, many of which cannot be manipulated by Fonterra. For example, how can the rules of the dairy sector, the main one of which is the promotion of more and more production, suddenly be seen to promote organics which is of necessity going to lower production (because, for example, the use of nitrogen chemical fertilisers is not allowed). At present Fonterra is encouraging farmers to try to even out production over the whole season so, as a manufacturer of milk products, it does not have changing production levels to deal with. This is encouraging the use of imported food supplements such as palm oil kernels. These contradictions are not lost on farmers.

The community at large has also done its bit to endorse dairy conversions to organics using such promotion tools as having an episode of Country Calendar on TV devoted to life on an organic dairy farm with an ordinary looking farmer who is not depicted as 'untidy' or a dreadlocked, Green Party supporter who smokes marijuana! Radio programmes on farming also have reported on organic farming.

All of this discussion presumes that by converting to organics farmers will be acting in ways that are more environmentally friendly. The two do not necessarily go hand in hand as the jury is out in this regard and it is one of the many things the ARGOS programme may demonstrate. But conventional farmers can also be encouraged to use more environmentally friendly practices. All farmers receive a 'daily docket' that reports on their production on the previous days, compares it with the same days last year, gives cumulative totals for the same period over this year and the last year and so on (Jay, 2004). It may help if milk qualities were reported per cow rather than per farm so that the emphasis was not related to stocking rate. (Stocking rates were not referred to by farmers in our interviews.) If farmers were required to frequently report on some environmental measures, for example,

stream measures where water enters and leaves the farm, soil activity, animal health, use of imported food supplements and were rewarded or penalised for this in some way just as they are for somatic cell counts and presence of antibiotics in milk, such things may also become a source of pride and discussion amongst farmers. Fonterra is at present developing an audit system for an integrated management form of dairy farming which may incorporate some of these things.

There are a number of negotiated approaches currently taken in New Zealand in order to engage in the search for sustainability. The many arguments for locally rooted solutions (Valentine et al., 2007; Stock, 2007; Jay, 2007; Bell et al., 2006; Pimbert et al., 2005) include property-rights incentives such as open space covenants, a modification of property rights reminiscent of the Maori tradition where the local community takes responsibility for managing the land for public good (Valentine et al., 2007: 316). Like the Ministry for the Environment, Valentine et al. (2007: 317) argue that “solving problems associated with sustainable development is *not* about changing the ways of individual land owners but about seeking new ways of thinking about systems, neighbours and whole-farm planning”. Although Bourdieu’s theoretical ideas have been critiqued as being those of social reproduction rather than of transformation, as Matthew Adams (2006: 515) argues “there are opportunities to play the game in more than one way”. As their numbers increase, and given the amount of human capital they possess, dairy farmers who practise organic land management should be able to negotiate new ways of thinking with competence and confidence.

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