Productivist and Post-productivist Conceptualisations of Agriculture from a New Zealand Perspective

Mairi Jay
Department of Geography
University of Waikato

Introduction

This paper considers productivist/post-productivist conceptualisations of agriculture in the light of changing New Zealand attitudes toward protection of indigenous vegetation and wildlife. It will show how the attitude of farmers toward native habitat and wildlife mirror changes in the wider New Zealand society. It will suggest that post-productivist elements vary from one part of the world to another, and thereby reflect not so much change within agriculture, or even change within rural society, but changing relationships between the wider society (of which agriculture is always a part), and the environment.

Comparison of the particularities of post-productivist agriculture in different countries and regions reveals significant differences. In many cases these differences can be related back to aspects of the host society that are not directly related to agriculture. While elements of so called post-productivist agriculture are driven by factors endogenous to agriculture and rural society, other elements are driven by exogenous forces, particularly policies, attitudes and values which originate from urban society.

Within New Zealand, mainstream pastoral agriculture continues to be driven by productivist attitudes and values. However, farmers are members of the wider New Zealand society, and are influenced by shifts in societal attitudes that give greater value to indigenous forest and indigenous biodiversity. The paper concludes that productivist and post-productivist agriculture exist side-by-side and that elements of post-productivist agriculture are a manifestation of structural and value changes in the wider New Zealand society.

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Productivist/post-productivist conceptualisations

To date, the concepts of productivism and post-productivism have been discussed and applied mostly within a British context (Battershill & Gilg 1997; Beedell & Rehman 1999; Carr & Tait 1991; Gasson & Potter 1988; Ilbery & Bowler 1998; Morris & Potter 1995; Shucksmith 1993; Walford 2002; Ward & Lowe 1994; Wilson 2001). Lowe et al (1993, 221) have defined productivism as "a commitment to an intensive, industrially driven and expansionist agriculture with state support based primarily on output and increased productivity". Ilbery and Bowler (1998) identified three major structural components of agricultural productivism as intensification, concentration, and specialisation.

Post-productivism has been defined largely in opposition to, and as a reaction to productivism, i.e. it comprises forms of contemporary agricultural practice that are not productivist. Wilson has summarised British conceptualisations of productivism and post-productivism on the basis seven dimensions, namely: ideology, actors, food regimes, agricultural production methods, agricultural policies, farming techniques, and environmental impacts. Productivist agriculture is said to have an ideologically hegemonic position in society; to involve a policy community that is small, powerful and tightly knit; to be part of a Fordist food regime; to involve industrialisation, commercialisation, concentration and specialisation; to have strong state support, to involve capital intensive farm techniques; and to cause significant detrimental environmental effects. Post-productivism is said to involve a loss of hegemonic dominance and a move away from agricultural fundamentalism; to comprise a wider agricultural community of policy makers; to involve new market relationships and changing consumer behaviour; to involve less emphasis on commodity production and less state support; to involve reduced intensity of farming, less environmental damage and a shift towards sustainable agriculture and conservation or restoration of valued landscapes and habitats. (Wilson 2001,80-81).

Wilson notes that the concept of post-productivism has been developed largely by UK academics and asks the question: "how easily can the notion of post-productivism be

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transferred to other geographical and cultural settings, and what implications does this have for the terminology of 'post-productivism' itself?" (Wilson 2001, 90).

UK conceptualisations of productivism and post-productivism

Before considering an answer to the question posed by Wilson, it is relevant to note the context of the British research and discussion. Much of the British academic discussion is in response to environmental changes in the UK countryside between the 1950s and 1980s, and the introduction of European Communion agri-environmental policies intended to reduce agricultural production, and prevent environmental damage. After the Second World War, British agricultural policy was to achieve domestic self-sufficiency in food production by providing subsidies and supports to farmers. The policy was continued when Britain joined the European Community in 1973. A central aim of the European Community's Common Agricultural Policy ("the CAP") was to ensure a comfortable standard of living for the agricultural community. To this end, agricultural policy aimed to improve farm incomes by providing price guarantees and farm supports. The subsidies encouraged farmers to maximise income by maximising production. The policies brought farm intensification of some areas and marginalisation or slow decline of traditional farming practices elsewhere (Potter, 1998: 30). Farming in areas of more intensive production brought increased use of fertilisers, pesticides, energy, land improvement, livestock intensification and overgrazing, large-scale mono-crop production, widespread pollution of streams and ground waters, and soil loss or degradation. In marginal areas there was land abandonment and loss of traditional local management systems (such as unusual grazing systems, or combinations of crops). Overall, there has been reduction or loss of mixed farming systems, hedgerows, forest, riparian margins, ponds, marshes, and semi-natural extensive grazing areas (heaths, moors).

By the beginning of the 1980s there was growing criticism of farming methods in UK and the damage that was occurring to wildlife and traditional rural landscapes. A member of the House of Commons wrote a searing critique of agriculture (Body 1982), decrying the subsidies for their gross expense to the tax-payer and consumer, rural depopulation as farm workers displaced by technology moved to the cities, and the damage to valued landscapes. By the beginning of the 1990s the British had introduced several agri-environmental schemes,

most notably the Environmentally Sensitive Areas scheme and the Countryside Stewardship Scheme. The schemes were designed to encourage farmers to protect valued features of the countryside such as wildlife areas, traditional farming practices, historic buildings, hedges, and stone walls, by providing financial incentives.

A series of British studies have found that the response of farmers to environmental protection schemes is varied and complex. Although productivist attitudes, values and practices continue to predominate among most farmers and in most parts of Britain, a significant minority of farmers are supportive of environmental schemes, and an even larger proportion are prepared to use agri-environmental supports as part of their farm management practices (Carr & Tait, 1991; Morris & Potter 1995; Walford 2002). Actual farmer involvement and support for agri-environmental schemes varies from region to region, and with the type and size of farms, the attitude of farmers, the age and social circumstances of farmers (for example, whether they expect a son or daughter to inherit the farm). For example, Battershill and Gilg found for farmers in the southwest of England that attitude outweighed structural factors as a determinant of farmer behaviour (Battershill and Gilg 1997). On the basis of a study of farmers in the southwest of England, Ward and Lowe suggest that "agrarian ideology and culture might be being challenged and reshaped within a changing rural society." (Ward and Lowe 1994). Beedell and Rehman (1999) found that conservation farmers (i.e. farmers who were members of the English conservation organisation Farming and Wildlife Advisory Group or "FWAG") valued hedges more highly than conventional farmers, believed in the conservation benefits of hedges more strongly, and felt greater social pressure to manage their hedges. These and other studies suggest that while a majority of farmers in the United Kingdom remain production-focused, changes in both attitude and practice are occurring in response to government policy as well as changes within farming and the rural community. If the changes of government policy reflect the influence of Britain's urban majority, then it can be said that many of the changes in UK agriculture are influenced by urban society.

Australian conceptualisations

At least two Australian geographers have recently considered the concept of post-productivism in the light of Australian experience. Argent (2002) gives a response in the light

of his experience of agriculture in the better watered parts of Australia. Holmes comments on the concept in the light of changes happening to the rangelands of the dry interior.

Argent briefly summarises the era of Australian agricultural productivism from WW2 to 1973, when Australian agriculture experienced the shock of Britain's membership of the European Community and policy reforms by the Whitlam Labour government that removed the subsidies and concessions previously enjoyed by farmers. He notes that concern at the environmental effects of agriculture also influenced Australian policy. Through the 1980s and 1990s, Australian agriculture was forced to switch from a reliance on government subsidies, to "normative values of economic efficiency, individual self-reliance and ecological sustainability" (Argent 2002, 105). The emergence of Landcare undermined a view that farmers alone were the wisest managers of their land and the dominance of agricultural productivism was challenged by a new paradigm "based on economic fundamentalism, environmentalism and a landscape aesthetic drawn from the rural idyll" (Argent 2002, 106). However, Argent argues that the post-productivist conceptualisation of agriculture is misconceived because it fails to account accurately for the complex nature of regional- and farm-level actions (Argent 2002, 106) and creates a false dichotomy between productivist and post-productivist forms of production. Although Australian agriculture has changed from the productivist era, Argent argues there is little evidence that it is becoming subsumed into a post-Fordist food order or remade by consumptionist values; rather, it has changed in response to policy initiatives and urban values and concerns that give less weight to production and more weight to economic efficiency and environmental sustainability.

Holmes (2002) summarises the change occurring to the outback Australian rangelands as change from pastoral use to Aboriginal title and the amenity uses of conservation and tourism. He notes that rangeland interests lie mostly outside the market economy (e.g. indigenous heritage or conservation) or they seek access rather than ownership e.g. tourism operators. These concerns originate both internally but (more importantly) externally, from the cities. Compared with Europe, Australian rangeland change does not involve change in agricultural polices or a new round of capital accumulation, but lies mainly outside the market with "emerging amenity-oriented values and uses that are multi-faceted and influential in

demolishing the former pastoral hegemony" (Holmes 2002, 379). Holmes concludes that in the light of Australian experience, the concept of "post-productivism" as derived from European experience places too much emphasis on agricultural policies as a driving force rather than a response to changing circumstances (Holmes 2002, 380). The internal restructuring of rangelands agriculture from pastoral production to indigenous heritage, conservation, and tourism uses is a symptom of change rather than a cause. Rangelands are not just rural lands of urban consumption, but have values that lie outside the market (e.g. indigenous identity). He suggests that the key drivers to post-productivism are agricultural over-capacity, alternative amenity uses, and changing societal values (Holmes 2002, 380).

To summarise their views, both commentators, argue that rural change in Australia is different from the patterns observed in Europe. Although the productivist hegemony of farmers and pastoralists has been broken, Australian rural lands are not becoming landscapes of consumption. Instead, the changes reflect urban concerns about the environment, and broader societal change such as the growing strength of Aboriginal rights, and a move away from colonial dependence on UK as the mother country, to an ethic of economic efficiency, self-reliance and ecological sustainability.

The New Zealand example

Prior to 1985, New Zealand agriculture and rural institutions displayed most of the classic productivist features described for agriculture in the developed market economies (Bowler 1992; Le Heron & Pawson 1996; Munton 1992). It was geared to commercial production of bulk commodities, strongly influenced by scientific research, maintained strong political influence and support, and involved enormous destruction to the pre-agricultural environment. From early days pastoral agriculture was supported and sustained by government policy and government funded incentives and research (Brooking, Hodge & Wood 2002). Between 1920 and the mid-1980s the government assisted the sustained development and intensification of a pastoral "grasslands revolution" by funding agricultural science and advisory services, and providing a host of development incentives and price support mechanisms. There was rapid and widespread up-take of new technologies such as application of fertilisers, aerial topdressing, and the development of milking machinery. Increased agricultural production

was equated with progress and virtue, and the men of agriculture (scientists, policy makers and farmers) were upheld as heroes (Brooking, Hodge & Wood 2002).

New Zealand pastoral agriculture was based on the destruction of native grassland and forest for conversion to a landscape of northern hemisphere plants and animals (Crosby 1986; Holland, O'Connor and Wearing 2002; O'Connor 1993; Roche 2002; Starr & Lochhead 2002; Wynn 2002). Between 1840 and 1920 the area of indigenous forest was reduced by more than half from approximately 140,000 sq kms to about 67,000 sq kms (Memon and Wilson 1993). By the 1950s and 1960s, most of New Zealand's indigenous wildlife had disappeared from inhabited parts of the country, and in many areas transformation of the landscape from indigenous forest to farmland was so complete that little but vestiges remained (M.f.E. 1997, 9.34-35; Park 1995; 2002).

New Zealand Society and its changing environmental relations

From the beginning of European settlement, New Zealand society depended substantially on the wealth of its rural economy for export income and the health of its domestic economy. But the nature and extent of this dependence has altered over time. At the beginning of the 20th century, meat, wool and dairy products made up more than two thirds of New Zealand's exports; by the end of the century, they made up only a third (Statistics New Zealand 2000, 379-380). In 1950, manufacturing provided just over 1% of export income but had climbed to 29% by the end of the century (Statistics New Zealand 2000, 380). The nature of income from rural enterprise had also changed by the end of the century. In particular, tourism, based largely on the attractions of the country's indigenous landscapes, became a major source of income and rural change. In 1960 the number of overseas visitors was less than 50,000. By the end of the century it was more than 1.5 million and receipts from tourism formed a significant proportion of the national income. In 1999 estimated foreign exchange earnings from tourism amounted to $3.6 billion compared with $4.4 billion for the dairy industry (Statistics New Zealand 2000).

Social and economic changes were reflected in landuse changes, from a landscape that was overwhelmingly dominated by pastoralism, to one which, particularly near cities and in

favoured parts of the country, was much more diversified. There were shifts in the type of farming, in the nature and structure of agricultural enterprise, and in the nature of rural society. Journeaux (1996) noted that between 1980 and 1995 the area in sheep and beef farms declined 18% (from 7.7 million hectares to 6.3 million hectares) while the area in dairying rose 56% (1.25 million to 1.95 million hectares) and the area in forestry 111% (from .87 million to 1.85 million hectares). Moran (1997) noted that between 1976 and 1990 regional diversification into horticulture brought about a reduction in average farm size in parts of the country suitable for horticulture, while the average farm size remained stable or increased in remoter parts of the country under pastoral farming. Part-time farms, hobby farms and rural-residential life-style blocks also became a significant feature of the countryside. In 1999, 29% of landholding units recorded as holding livestock and/or engaging in grain/arable cropping were under 10ha in size (MAF 2003). Forty six percent of these small holdings were located within Auckland, Waikato and Canterbury regional council areas.

Other writers noted parallel changes in the structure of rural society (Joseph, 1999; Liepins, 1997; Press and Newell, 1994; Scott, Park and Cocklin, 2000). Rural society became less homogeneous, with a smaller proportion of people directly involved in agriculture. Further studies have shown that pastoral farming itself has diversified and changed. Among sheep and beef farmers, for example, there was on-farm and off-farm diversification including small rural processing industries, forestry, farm home-stays and other tourism enterprises (Johnsen, 1999).

Through the 19th and most of the 20th century, mainstream societal attitudes supported the development of agriculture and clearance of indigenous forest. Agriculture was perceived as New Zealand's economic mainstay and politically "farmers were kings" (Roche, Johnston and Le Heron 1992). However, by the beginning of the 1970s environmental issues had gained widespread recognition within New Zealand society as a whole, and the environmental movement began to enjoy significant political support. The Values Party, established in 1972, articulated a philosophy that was counter to the productivist ethic and performed well in the elections of 1972 and 1975 (Buhrs & Bartlett 1993). As evidence mounted of the environmental damage caused by resource exploitation, major conflicts occurred between

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rural resource users and environmentalists and recreationists who were largely urban based. In 1969 the government proposed to raise the level of Lake Manapouri, one of the South Island's most beautiful lakes, for electricity purposes. The Save Manapouri campaign was mounted and received such widespread public support that in 1972 the government retracted and agreed to maintain the Lake at its natural level (Wheen 2002). There was conflict between environmentalists and the New Zealand Forest Service, in relation to the harvesting of indigenous forest (Memon and Wilson 1993); conflict between recreationists and farmers over the use of water from recreationally and scenically significant rivers (e.g. the Motu and Rakaia), and conflict between mining companies and local residents about the impact of mining on the landscape, and the value of mining for local communities.

In addition to the growth of the environmental movement in the 1970s and early 1980s, there were fundamental changes to New Zealand's terms of trade as world commodity prices fell for bulk agricultural products (Le Heron 1991; Roche, Johnston & Le Heron 1992; Cloke and Le Heron 1994; Le Heron 1996). Political cleavages developed between urban and rural communities as farmers continued to receive supplementary payments, subsidies, and incentives in the face of a growing balance of payments problem. Where the state had played a major role in the development of natural resources (including farmland and forestry) upto the 1980s, it came to be viewed as a hindrance to economic growth and development. There was a demand for a reduced role of government (Buhrs and Bartlett 1993; Memon 1993). The catch cry, particularly from the urban business community, was 'less government in business and more business in government'. The changes came to a head in 1985 when the 4th Labour government won the election and replaced the rurally-based National Party. Within its first term, the new government established a far-reaching series of economic changes designed to deregulate the New Zealand economy. They included the removal of wage and price controls, removal of import controls, removal of almost all subsidies to the farm sector, flotation of the dollar, and removal of restrictions on currency flows (Cloke and Le Heron 1994). These economic changes were followed in its second term by a raft of legislative changes that expressed and consolidated a changed relationship to the environment.

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The economic changes brought in by the 4th Labour government had a profound impact on the farming sector (Cloke 1996; Cloke and Le Heron 1994; Fairweather 1987; Frengley and Johnston 1992; Johnsen 1999; Smith and Saunders 1996; Walker and Bell 1994). Most particularly, it forced farmers to become more efficient in terms of production (Walker and Bell 1994); that is, it increased the productivist pressure on farmers. But as noted by Le Heron (Cloke 1996; Cloke, Le Heron & Roche 1990; Le Heron 1991) the most severe impacts on farming came not from the government policies directly related to agriculture (the removal of farm subsidies) but from economy-wide policies, particularly the floating of the currency and a consequential rise in interest rates. The influence of this indirect tier of government policy on productivist farming is an important point to note, and will be discussed again near the end of the chapter.

The post-1985 liberalisation of the economy and the enactment of new environmental legislation reflected the philosophies of environmentalists who wanted greater accountability for the use of rural resources, and economic reformists who wanted to see a reduced role for government in terms of rural development and agricultural protectionism (Buhrs and Bartlett 1993; Cloke and Le Heron 1994; Le Heron 1991; Memon 1993; Roche, Johnston & Le Heron 1992). Two of the most significant pieces of legislation were the Conservation Act 1987 and the Resource Management Act 1991. The Conservation Act established the Department of Conservation in place of non-commercial arms of the former New Zealand Forest Service, Lands and Survey Department, and Wildlife Division of the Internal Affairs Department. It enabled an integrated and consolidated administration of all Crown-owned native habitat and wildlife for conservation purposes. Similarly the Resource Management Act introduced an integrated approach to management of land, air, water and coastal sea by repealing over 50 previous statutes. It coincided with changes to the form of local and regional government that provided an institutional structure to enable the implementation of the Resource Management Act[1]. The effect of the Resource Management Act is to enable use, development and protection of natural and physical resources provided that there are no significant detrimental environmental effects. Where farmers had previously experienced little legislative hindrance

[1] The Local Government Amendment Act 1989 was drafted in parallel with the Resource Management Act in the full recognition and intention of creating local and regional government structures that would be capable of implementing the provisions of the Resource Management Act (Memon, 1993).

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to their activities, the Resource Management Act 1991 introduced provisions that were more relevant to rural than urban areas. It included a requirement that, "persons exercising functions and powers under [the Act]…shall recognise and provide for" the preservation of the natural character of the coastal environment, wetlands, lakes and rivers and their margins; protection of outstanding natural features and landscapes; and protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna. (NZ Government 1991). These provisions were a reflection of the political power of predominantly urban policy makers who were strongly influenced by overseas environmental discourses of the time (Memon 1993; Palmer 1990; 1995)

Agricultural attitudes toward indigenous forest and wildlife

Full-time pastoral farming remains the most widespread type of farming in New Zealand despite significant shifts away from pastoralism towards alternative land uses such as forestry and horticulture. While horticultural farms comprised 14,172ha in 2000, pastoral farms comprised 15.5 million ha (MAF 2003). Pastoral farmers remain key figures in most rural communities and their attitudes, values and management priorities continue to shape the rural landscape to a major extent. The published literature indicates that the majority of pastoral farmers remain strongly productivist in focus but show evidence of changing attitudes about indigenous habitat and the natural environment.

The 2002 Annual Report of the Queen Elizabeth II National Trust reported that it had 1,620 registered covenants protecting 56,000ha of indigenous habitat, and that, "our work represents only a tiny fraction of the need and the opportunity for conservation on private land, the limiting factor being funding [to cover the legal costs of covenanting]" (QEII 2002). National Trust covenants apply to land in private ownership and are entirely voluntary. Landowners receive no compensation apart from assistance with the legal costs of covenanting and the cost of fencing. Thus covenants are a reflection of strong commitment by individual landowners to protect indigenous vegetation.

A 1989 survey of 191 Waikato property owners with native bush or wetland on their property found that owners were highly positive in their attitudes toward indigenous vegetation

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(Cruickshank and Peuckert 1989). A majority thought that there was not enough native vegetation left in the County and that the remaining native vegetation should be protected. A more recent survey by the author[2], of 130 dairy farmers in the same region found that 43% reported some indigenous vegetation on their property. Of the farmers with native bush on their property, 48% would "mind a lot" if the bush were cleared, and another 34% would "mind somewhat". Of the farmers without indigenous vegetation on their property, a majority (56%) said that they would have liked native bush on the farm. These results reinforce the findings of the 1989 survey and are all the more impressive because the sample was weighted in favour of farmers who reported higher than average milk production[3].

There may be regional differences in the way farmers perceive indigenous habitat. The results for farmers in the Waikato region contrast with those in the Catlins District of the South Island. A 1991 study by Wilson (1992) examined the nature, pace and causes of indigenous forest clearance on farms. He found that 61% of respondents gave practical reasons why indigenous forest was still present on their farm. Wilson concluded from the research that "on the majority of farms in the Catlins District, indigenous forest only persists to the present day because these areas are perceived as being unsuitable for farming" (Wilson 1992, 124).

Other studies suggest that while there may be sympathy for environmental issues and protection of native habitat, it is a value that most farmers must balance against competing objectives. A study of farmer goals by Parminter and Perkins (1997) identified goals such as 'being my own boss', keeping the farm in the family, being part of a stable community, paying off debts, and 'providing future opportunities for my children', as well as maximising farm profits. The study found that "Production goals were the most important goals for 43% of farmers. Less than 10% of farmers had their highest goals associated with the environment, although most farmers ranked environmental goals relatively highly". (Parminter and Perkins 1997, 108).

[2] Doctoral research in progress with the survey completed in June 2001.

[3] The annual milk production reported by the survey respondents was compared with the dairy statistics published by the Livestock Improvement Corporation.

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Bradshaw, Cocklin and Smit (1998) found from a study of sheep and beef farmers in Northland that despite considerable private costs of on-farm environmental stewardship, approximately one-third of their respondents undertook tree planting. Motivations included practical reasons (e.g. erosion control and fencing of watercourses to prevent stock losses in watercourses), but also aesthetic and heritage reasons. They concluded, "Farm-level activities which protect or enhance the environment appear to be undertaken with or without direct state subsidies for such actions, as well as during periods of both financial stringency and well-being." (Bradshaw, Cocklin and Smit 1998, 18).

A study of North Island Hill Country Farmers (Rhodes, Willis and Smith 2000) found substantial commitment to sustainable land management, including planting of shelter belts, erosion control, establishment of conservation reserves, and a concern for the aesthetic quality of the land. However, the authors concluded that, "The study does show that for farmers struggling to survive, issues of long-term environmental sustainability are necessarily pushed aside in favour of immediate financial needs." (Rhodes, Willis ands Smith 2000, 2).

Underwood and Ripley (2000, 13) noted that farmers have a priority ordering of concerns, "with economic considerations coming first, then social priorities and thirdly environmental aspects of sustainability". Key constraints to the adoption of sustainable farming practices included low income, high debt, an ownership structure which limited the farmer's freedom to make management decisions, availability of labour, and "term of outlook" or how long the farmer had been on the farm and expected to remain on the farm.

The above studies suggest that although a majority of pastoral farmers are driven first and foremost by considerations of production and financial viability, environmental stewardship is a concern of many even when profitability and production are the top priority. For a majority of the farmers who undertake environmental measures, utilitarian motives are important, but non-utilitarian attitudes may also be significant. Although financial constraints are often identified as a barrier to protection of indigenous vegetation, there is evidence that many pastoral farmers protect indigenous vegetation despite financial constraints.

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Productivism/post-productivism from a New Zealand perspective

Is the productivist/post-productivist conceptualisation useful? In the view of this writer, the answer is a qualified "yes". However, while the concept of 'productivist' agriculture succinctly describes the main focus of New Zealand pastoral farming, 'post-productivism' is much more problematic because it fails to accurately describe the changes that are occurring within New Zealand agriculture and conflates social change with agricultural change. As currently formulated, it implies that productivism and post-productivism are primarily descriptive of agriculture, as opposed to rural society, and that there is a progression from productivist to post-productivist agriculture. In the New Zealand context, productivist and post-productivist forms of agriculture co-exist within the same social and agricultural spaces. For example, within the Auckland, Waikato, Bay of Plenty, and Canterbury regions highly production-focused dairy farmers and horticulturalists may be neighbours to life-style and hobby farmers. Conversely, within the peripheral regions of Northland and the East Coast of the North Island, subsistence farmers co-exist with production-focused dairy farms and sheep and beef farms.

Equally to the point, society-wide value changes in relation to the environment brought legislative and institutional changes that called for greater protection of the environment, including conservation of indigenous fauna and flora. The new environmental legislation reflected a changed relationship between the environment and New Zealand society as a whole; the environment was no longer perceived as the ground for unlimited primary production, but as a source of material and non-material values outside of agriculture. As the habitat of the kiwi, the native tree fern, and other natural icons, it is a source of national identity, and as a visitor destination it provides a significant alternative source of income for the national accounts. In addition, as more and more New Zealanders travel overseas, there is perhaps a realisation that many of the plants and animals of their homeland are found nowhere else on earth. This realisation applies to farmers as well as city people; as we become globally more interconnected, the uniqueness of home becomes more obvious and more valued. Just as a majority of the farming community accepted the policies of economic liberalisation imposed by the 4th Labour government in the latter 1980s (Cloke 1996), the research reported earlier suggests that many farmers accept the value of indigenous fauna and flora.

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Thus in the New Zealand case, post-productivist elements appear to be more a feature of rural society rather than 'agriculture' as a single entity, and to reflect value changes that apply to New Zealand society as a whole. The diversity of farm sizes and farm types reflect social structural changes such as reverse urban to rural migration, and diversifying economic opportunities (e.g. tourism and craft production), while the value changes include a greater concern for environmental protection and the symbolic value of New Zealand's distinctive fauna and flora and natural landscapes.

Conclusion

The concept of post-productivism reflects an observation, repeated in the US, Britain, Australia, New Zealand, and other countries, that rural society and some aspects of agriculture are undergoing fundamental change. However, the details of change vary from place to place in accord with local, regional and national circumstance of landscape and political economy. In the UK, where agricultural overproduction is a serious problem, but where agricultural policies are a fundamental part of Britain's relationship with its European partners, agricultural changes are strongly tied to policy instruments consistent with the European Common Agricultural Policy. In Australia, the post-productivist changes of the dry interior rangelands have involved a re-assertion of Aboriginal landrights and moves to traditional Aboriginal uses, recreation and landscape preservation (Holmes 2002). Argent suggests that for the more humid south-east Australia, agricultural change has been influenced by nationalist ideals of Australian self-sufficiency and independence coupled with the growing concern of policy makersand environmentalists about the environmental effects of agriculture (Argent 2002). In New Zealand, post-productivist values and institutional arrangements reflect a concern for the damaging impact of agriculture on soil, water, native fauna and flora, and natural landscapes and the economic threat to agricultural exports and tourism that results from damage to a 'clean green' image.

The elements of post-productivism in these countries have been more driven by urban-based interest groups than farmers. In New Zealand, the key reforms of the mid-1980s, like those of Australia a decade earlier, were instituted by urban-based government policy-makers, business

interests, environmentalists, conservationists, recreationists and tourism entrepreneurs (Memon 1993; Palmer 1990; 1995). Farmers, at the 'front edge' of society's interaction with the environment, may have been identified as the key agents of agricultural change, but at least in New Zealand, they have been the recipients as much as leaders of change. As the economic reforms of the 4th Labour government demonstrated, the policies which impact most on agriculture may not be those created by or for farmers, but may apply to society as a whole.

Finally, at least in the case of the UK, Australia and New Zealand, significant elements of post-productivism reflect a realignment of relationships between the environment and society as a whole. In the UK, significant aspects of the post-productivist 'reformation' have involved disputes about the impacts of productivist agriculture on valued traditional farming landscapes, heritage buildings, and wildlife. Agri-environmental policies have sought to reduce the impact on valued features and to reinstate traditional farming land management practices. In Australia, with its fragile soils and scarce water resources, the concerns have related strongly to the impact of farming on soil and water resources as well as the impact on Australia's unique fauna and flora. In New Zealand the environmental concerns have related to soil and water issues, but also, as already indicated, to the impacts of agriculture on native habitat and natural landscapes. These are not only important for the 'clean green' image of New Zealand's export products, and for tourism, but are important to many individual New Zealanders for symbolic reasons.

While the 'hard' elements of environmental damage (e.g. pesticide pollution, soil and water contamination) have received the most attention from policy makers and analysts, however, it may well be that the 'soft' elements of the environment (valued landscapes, symbolic icons, indigenous rights) are ones which are the most regionally and nationally distinctive, and which reveal the most significant spread of change from a productivist to post-productivist paradigm.

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