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Agri-Food Restructuring: A Synthesis of Recent Australian Research

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ABSTRACT Globalizing tendencies within capitalism are leading to important alterations in the structure of agricultural production and the ways food companies are involving themselves in processing and marketing. Increasingly, finance capital and transnational agribusiness have sought ways to influence, and in some cases redirect, farming activities in Australia. The penetration of farming structures by corporate capital has been hastened by state deregulation. Rather than providing detailed empirical evidence, this paper presents a broad synthesis of recent Australian research with the aim of informing readers otherwise unaware of events in the Antipodes of the forms and impacts of agri-food change in Australia.

Introduction

Australia's agricultural economy has had an international focus for over a century and a half, with the shipping of commodities such as wool, wheat, lamb, and beef to markets in Europe and, later, Japan and the U.S. Agricultural commodities have been a major source of external revenue, contributing well over half of total export value until the 1950s. One common feature of farming has been, and continues to be, the important contribution land-based production makes to the nation's export income (see Share et al. 1993). Another has been the process of "adjustment"—with producers on many medium-sized holdings either leaving agriculture or increasing the scale of production through land acquisition (Gleeson and Topp 1997). It would therefore be wrong to believe that agricultural structures have ossified, or that change is only a recent feature. Agriculture is, and has been, a dynamic industry in Australia, and producers and their representatives have been acutely aware of factors affecting supply and demand. Farmers have taken up advanced chemical, mechanical, and biological technologies developed by the corporate sector, have welcomed extension advice provided by the state, and have relied upon the state and banking sectors to assist in the financing of new equipment and other purchases (Burch et al. 1996; Lawrence 1987). Just as in the U.S., viable farms are becoming larger in size, are producing the great bulk of the output (with some 30 percent of broadacre farms producing 70 percent of the industry total. See Robertson 1997:84), and are becoming more industrialized (Napier 1997). The result has been the continuation of a "productivist" model of

agriculture that has come to characterize farming in countries such as the U.S., Canada and many European nations (see Buttel 1994; Commins 1990; Marsden et al. 1993; and for Australia, Lawrence 1995; Lawrence et al. 1997; Vanclay and Lawrence 1995).

The main argument advanced by those who suggest there is something quite different about the present trajectory of farming in Australia is that, facilitated by finance capital, farmers, who were once (relatively) independent commodity producers who sold products under state-authorized marketing arrangements, are becoming progressively integrated into the industrial food sector. Class relations are changing as control over the production process moves off-farm, with entities like banks, food processors, and supermarkets having a greater say in production, and new relations with the farming sector and novel distribution arrangements offer transnational corporations (TNCs) greater profit making opportunities (Burch forthcoming; Share et al. 1991). It is a system that possesses many of the same features U.S. sociologists Wolf and Wood (1997) have identified in "precision farming" (coordinated technical linkages in the agri-food commodity chain). Moreover, rural producers in Australia are no longer directly underwritten by the state. State deregulation—in an era of rapid advances in technology, increased volatility in global markets, and the concentration of food processing (see Napier 1997)—has ensured that the future of "family farming" is linked unambiguously to the profit-making aspirations of firms in the corporate sector.

Share et al. (1991) highlight the growth of TNCs since the Second World War and indicate that Australian farming has been drawn progressively into various circuits of industrial and finance capital. Since the 1980s such integration has accelerated—linked, as it has been, to the dismantling of tariff barriers and the removal of most subsidies (see Hungerford 1996). Rather than relying upon statutory marketing or other forms of state support, farmers have begun to negotiate with agri-food processors and retail chains which have, in turn, been contracting with individual producers—or groups of producers—for the provision of specific commodities for particular local and international markets (see Burch forthcoming; Pritchard 1998; Share et al. 1991).

Production contracts

Although the bulk of Australia's agricultural production does *not* occur under contract, there is no doubt that, consistent with wider tendencies for the reorganization of agriculture by various fractions of capital (see Moreira 1998; Wolf and Wood 1997), some industries are showing a significant move towards contract production and, with it, changes in managerial authority. Changes in potato

production in the Australian island state of Tasmania are indicative. Until the 1950s, potatoes—the island's major vegetable crop—were produced for the fresh market. Today, some 95 percent of the crop is grown under contract for the frozen food market, where food processors, such as JR Simplot (ex-Edgell-Birds Eye) and McCain, dominate. Forty years ago there were 7,000 producers; today there are 550 (Fulton and Clark 1996). The survivors sign production contracts which specify volume, variety, and price. In an era of declining state involvement in extension (see Vanclay and Lawrence 1995) farmers rely increasingly on agronomic advice and crop management options provided by the processing companies. Field officers visit farmers to organize seed supply, arrange contract conditions, and negotiate harvesting dates. Field officers, and input-supply companies' representatives, almost always recommend the purchase of greater volumes of agri-chemical and other inputs, creating a dependency between the growers and agribusiness input industries. As a direct consequence, borrowing for such purchases places the producers in a dependent relationship to finance capital (see Fulton and Clark 1996).

Conditions in the processing potato market were quite favorable during the 1980s. However, tariff reductions that allow more imports into Australia and global sourcing have led to prices being negotiated downward (Fulton and Clark 1996). While potato producers have low levels of internal subsumption, they exhibit high levels of capital penetration (in the form of market, technology, and financial dependence). According to Miller (1996) most growers want the contracts because of the economic benefits of linking with "globally-oriented" food corporations. However, this is not to suggest that they have no concerns about entering into contracts; for example, most growers are very concerned about a loss of managerial autonomy (see Rickson and Burch 1996).

More general concerns arise around global sourcing. If Australian farmers become uncooperative or unwilling to produce in the manner desired, a company may now contract with farmers in alternative, off-shore, sites to fill the company's needs (see Burch forthcoming). This adds an external element of control—particularly in the negotiation of product price. The company gains flexibility, while the individual farmer, whose whole strategy may be geared to the production of commodities specifically for one contracting company, loses negotiating power (see Burch et al. 1992).

Because the demand for vegetables and other processed crops is occurring in the context of a decline in price for traditional broad-acre agricultural products, it is quite likely that contract production will grow in importance—as it appears to have done recently in some of Australia's most important farming areas, such as the Dar-

ling Downs region of Queensland, in northern New South Wales, and in Tasmania (Miller 1996; Rickson and Burch 1996).

Dependence on finance capital

The rural crisis of the mid-1980s was fueled by high interest rates (above 20 percent in several years). Finance institutions were eager to lend funds, and farmers were advised to expand property size. Smailes (1996) has highlighted the "entrenched indebtedness" of producers in South Australia and attributes some part of the problems faced by farmers in the 1990s to the deregulation of the banking industry in 1984. Following deregulation, the banks pursued "market share" policies which included lending to rural producers beyond levels at which those producers could service loans. Some farmer groups, outraged at the ways banks behaved, spoke not about "friendly competition" but "blatant coercion" (see Smailes 1996:307) as farmers were induced to take loans on the terms and conditions which suited the banks. Unfortunately for the producers, much of the borrowing was closely followed by slumps in the price of most export agricultural products. While interest rates have now fallen to below 10 percent, commodity prices have not improved, and input costs have continued to rise (see Gleeson and Topp 1997). Many farmers remain "caught," needing to borrow for inputs, but unable to cover input costs from the sale of commodities. In such circumstances, the repayment of outstanding loans has been something of an impossibility. It is estimated, for example, that some 80 percent of Australia's broadacre farmers have been unprofitable over the past ten years (see Robertson 1997).

The ratio of farm debt to the gross value of farm production (with inflation factored in) has risen from 59 percent in 1984–1985 to 76 percent in 1994–1995 (see Gleeson and Topp 1997:57). As the ratio has increased, and the overall level of debt has mounted, farmers have left the industry. In the ten years up to 1994–1995 the number of commercial farms (with operating surpluses of more than A\$18,000) fell from 130,281 to 115,368, with the decline—at a rate of over one percent per annum—predicted to continue for years to come (McKenzie 1997:3). Because the debt problem is so widespread, the banks have not been foreclosing on the properties of those who remain in agriculture. Instead, continued borrowing has allowed farmers to purchase agribusiness inputs; they may be indebted, but they are still able to apply agri-chemicals and fertilizers in a manner consistent with the perpetuation of productivist agriculture.

Argent (1996:283) draws a distinction between the former, highly-regulated form of banking (1952–1983) and the "new essentially globalized" form becoming dominant in Australia. He sug-

gests that the Australian macroeconomy is no longer managed for "stability" but, rather, to respond to immediate changes in international financial markets. Consequently, farmer-finance company relations—built, since the Second World War, on trust, security, and harmony—have been replaced with a "marketplace" logic where bankers blame world financial dealings (rather than their internal policies) for instability and volatility. Farmers have condemned the banks for their rapaciousness and rejected the banks' excuses. According to Argent, this is consistent with Mooney's (1988) contention that blame for their own "managerial incompetence" is something farmers are not prepared to accept in times of a generalized crisis in the rural economy.

The banks and other financial institutions are implicated in the trend toward corporate-linkages in family-farm agriculture. Across the Tasman Sea, in New Zealand, where deregulation has arguably had longer to show its effects (see Kelsey 1995), a new variety "of leasing, equity sharing, and anti-trust arrangements . . . are starting to drive a wedge between family ownership and operation" (Le Heron 1993:163). Campbell (1994a:242) has posited that New Zealand farmers' debt "crisis" is directly linked to new forms of restructuring encouraged by the actions of "aggressive creditors." In Australia, the private banks have been implicated, for over a decade, in tactics and policies that have been viewed as encouraging/facilitating increases in scale of production and greater levels of farmer indebtedness (see Lawrence 1987). Fagan and Webber (1994:97) argue, for example, in the case of the pastoral firm Elders, that the company "judged that in the long run it would be more profitable to sell finance and agricultural services to Australian farmers than to sell farm products on depressed world markets. . . [In this way] farmers would require services and go into debt."

Changes in the food industry

In the past two decades, various strategies of agri-food development in Australia have paralleled the demise of state monopoly marketing boards. First, in the early 1980s, was a merger/takeover phase in the meat, brewing, and confectionary industries aimed at increasing market share in the face of a decline in the rate of domestic growth in those industries. Second, larger domestically-based agri-food firms moved away from rural-based interests into such activities as banking, chemicals, minerals, energy, and brewing. Then companies (such as property developers and shipping firms) hitherto uninterested in agriculture or agriculture-related activities moved into food production. Fourth, production internationalized as Australian food processing firms set up branches abroad—initially in the U.K. or U.S., but later in the Asia-Pacific region (Fagan and Webber 1994). A fifth, more recent, strategy has

been global sourcing by retailers (see Burch and Goss, this volume; Burch and Pritchard 1996; Parsons 1996).

The stock market crash of 1987 brought considerable change to the corporate food sector in Australia. The main effect has been, however, the acceleration of corporate interest in exporting into the Asia-Pacific region—something unquestioningly desired by the Australian government (see Department of Foreign Affairs and Trade 1994; Pritchard, this volume) and by industry (see Rogers 1997). It is argued that, with strong economic growth and increasing affluence among a growing Asian population, Australian-based products will find new markets which, according to the Department of Foreign Affairs and Trade (1994:4), will be driven by “large-scale conglomerates and agribusinesses, both local and foreign.”

As companies in the Australian food sector are taken over by TNCs, a number of processes are likely to occur: more Australian processed foods will be exported; foods with identifiable Australian brand names will be manufactured from Australian raw materials within the low cost labor regions of Asia; Australian brand names will be used to help other products of TNCs penetrate the market; and TNCs will threaten to develop plants off shore as a means of keeping food manufacturing costs lower in Australia (see Fagan and Webber 1994:100–101). Sourcing raw materials overseas might also be expected to keep contract prices down in Australia.

Although Australia wants to export high value-added goods (see Garnaut 1989) the countries to which Australia exports—all “cheap labor” nations—want to add value within their own territories. According to the Rural Industries Research and Development Corporation:

reliance on a strategy focussed chiefly on exporting to South East Asia will yield only limited benefit. (These countries) have very determined and deliberate policies . . . to capture value added benefits for themselves and have no intention of becoming reliant on high value added imports. . . . The development of their own processed food industry has been enormous over the 1970s and 1980s and their export performance outstanding while Australia has slipped. (RIRDC 1994:3)

It would seem that Australia is being forced to conform to the so-called Pacific Rim Strategy (see Rees et al. 1993), concentrating its efforts in the production and delivery of cheap foodstuffs to a burgeoning Asian population, rather than, as governments in Australia obviously desire, evolving a much larger processed food sector which can sell higher value, processed foodstuffs to those Asian countries. If this happens, then events may follow the second scenario of Fagan and Webber (1994) mentioned above—that of ex-

porting raw materials and semi-processed goods for final value adding in low cost labor areas of the Asia-Pacific region. This would reinforce existing problems of economic dependence, as Australia continues to rely on a primary sector subject to trade decline and the vagaries of climate and employing fewer workers every year.

Outcomes of change

Effects on farming

Farming's closer links with agribusiness (and corporate capital in general) has been interpreted by most agricultural sociologists as representing increased subsumption (see Bonanno et al. 1994; Marsden et al. 1993; McMichael 1994a; Symes and Jansen 1994). Levels of *real* subsumption (farm ownership by external capital) appear to be low, but what is important is that *formal* subsumption (farm linkages with agribusiness for credit, inputs, and processing) is becoming an increasingly important feature of on-farm production. Formal subsumption is seen to continue as a result of "habitual practice, ideological consent and paternalism" (see Campbell 1994a:284) and is a characteristic of farming systems reliant upon productivist approaches. Because agri-chemicals and other off-farm inputs must be purchased, and such purchases are—in the context of poor incomes from the sale of commodities—normally funded from banks or other borrowings, farming is linked to financial capital in a manner generally favorable to the latter. One important outcome of subsumption is, then, that the global finance system is able to make new demands on farming—with contract production being but one example.

The movement to contract farming, which Little and Watts (1994:4) have described as one of the "striking commonalities associated with the restructuring of agriculture" throughout the world, poses an intriguing question: since contract farming tends to provide products which are part of a newly-developing section of agriculture (frozen potato products, fresh vegetables, organically-produced cereal crops, and so on), is "subsumption" the key to prosperity for individual producers? In terms of the social organization of agriculture, there is evidence to suggest that early "gains" are masking an uncertain future (see Rickson and Burch 1996). Contract prices can be readily organized downwards when companies source globally (see Burch forthcoming)—as most of the food transnationals do.

The issue of "flexibility" is of interest here, too. Some writers have predicted that post-industrial structures, such as niche marketing, smaller production units, and more dynamic relations between firms, will emerge within, and come to characterize, agriculture (see Kenney et al. 1989, 1991). Yet, labor "flexibility" and

production contract relations within the (supposedly “niche” market) feedlot beef industry are being employed to produce meats in a manner that appears to perpetuate Fordist tendencies in Australian agriculture (see Lawrence 1996). Perhaps, as McMichael (1994b) and Bonanno and Bradley (1994) have suggested, we should be looking at “flexibility” not in terms of the farmer/grazier or farm worker, but in terms of the agribusiness corporations. After all, their options are becoming more flexible at the same time that those of others in the production process (farmers, for example) seem to be diminishing.

Another outcome of the restructuring of agriculture relates to what might be best termed “detraditionalization” (Heelas et al. 1996; and for agriculture see Gray 1996; Lawrence et al. 1997). Farming tradition is being undermined, and with it, stability in the understanding of what is “right” in thought and practice. Approaches to farming, the significance of family, community obligations, and commitment to a “rural” lifestyle have been called into question as structural changes have undermined the traditional values and lifestyle choices of farming in Australia. A pervasive individualism born of economic rationalism (see Halpin and Martin 1996) is replacing the older style belief in “independence” found in measures of agrarianism (see Beus and Dunlap 1994). Other factors altering tradition include the movement of neighbors away from the industry, the need for off-farm work, the changing role of women, and the general stresses of modern-day farming life (see Gray 1996; Gray et al. 1993).

The financial crisis is seen to be producing “depression, anger, worry and feelings of loss of control and self esteem” (Gray 1996; and see Gray et al. 1993) which are causing a deep malaise among farming people whose ideology stresses self reliance. The stability of farm family relations is weakened by the constant battle to remain in agriculture. Importantly, a detraditionalized agriculture is likely to be one in which the social capital required to defend rural social structures, and to bring about desirable change, is diminished (see Bokemeier 1997; Lawrence et al. 1997).

Environmental impacts

There is ample evidence that Australian farmers believe they are on a production “treadmill” (see Schmaiberg 1980 for description) from which many are anxious to jump (see Gray 1996; Lawrence 1987). They appear to recognize that they are working harder, conforming to productivity-raising strategies (applications of agribusiness products), and coupling on-farm production with off-farm work opportunities. They recognize that new knowledges—such as options for a more sustainable agriculture—need to be incorporated into farm and catchment planning (see Lockie and Vanclay

1997). What often remains hidden is the extent to which farmers are prepared to over-extend natural resources to satisfy their strong desire to remain in farming.

There is now undeniable evidence (see Burch forthcoming; Burch et al. 1996; Lawrence and Vanclay 1994; Vanclay and Lawrence 1995) that the productivist approaches to agriculture in Australia have caused quite serious, and in some cases irreversible, damage to the environment. The use of agri-chemicals has, in particular, been responsible for off-farm pollution of streams and rivers; overcropping and overgrazing has led to severe erosion; and tree clearing, and practices such as continuous ploughing, monocropping, and irrigating have resulted in widespread soil and nutrient loss and salinization (Lawrence et al. 1992; Vanclay and Lawrence 1995). For example, Bryant (1992) has linked the poor state of finances in farming with environmental degradation. With wool prices at historically depressed levels, sheep producers in South Australia, as in many other regions, have been turning to grains. Some have been increasing crops by using shorter rotations and extensive cultivation. Those continuing in wool have been overstocking. Such intensification has occurred at a time when there has been little money for rehabilitative land practices (such as better fencing and minimum tillage). Producers have consciously "mined" the soil as a short-term means of staying in agriculture.

Productivist agriculture—and the treadmill that requires the farmer to "abuse" natural resources as a normal part of any output maximizing strategy—is fully implicated in environmental destruction. But could the restructuring of agriculture reverse this trend? One argument is that as farm size increases and profitability eventually returns, a smaller number of viable producers will have the financial wherewithal to adopt conservation measures. Others wonder whether restructuring will occur under conditions of continued trade decline and a pervasive developmentalist ethos that continues to encourage widespread tree clearing (Haworth 1997; Schapper 1997).

Moves to contract production may not produce desirable environmental outcomes—contracts with processors have generally left the problems of any environmental damage with the farmer (see Burch et al. 1992; Rickson and Burch 1996). Short-term production goals are consistent with processing firms' strategies for global sourcing, but militate against better land and water management on individually contracted farms. When processing companies adopt the common strategy of contracting by area, but harvesting by volume, it is the weight of the product—rather than the area which has been dedicated to production—which becomes significant (see Burch et al. 1992). This strategy—apparently uncommon in other

countries—is highly beneficial for the contractor. Yet, if the contractor decides not to take the farmer's entire output, the remainder is often left to rot in the fields. The costs of *not* harvesting are borne not only by the producer, but also by the environment because such "over-planting" increases soil loss through tillage, often results in excessive chemical spraying, and can cause nutrient depletion (see Squires and Tow 1991). Miller (1994) too, has demonstrated that as farming becomes linked to food processing there is no guarantee that sustainable resource-use practices will follow. As has been demonstrated abroad (see Morvaridi 1998) contract farming does not appear to address or ameliorate damaging production techniques; rather, it seems to result in their intensification.

According to Gare (1994/5) the environmental crisis must be placed alongside globalization and the "dissolution of the project of modernity" as one of the three most important developments the world faces today. For Gare (1994/5:138) there is an "indissociable relationship between globalization and the environmental crisis" in which the former leads inevitably to the latter. According to Yearley (1996) a growing consciousness of a shared global citizenship will ensure that environmentalism remains a powerful force in future political decision-making. For Lash and Urry (1994:293) the development of consumerism has elevated environmental issues, and furthermore, globalization creates new opportunities for localization. If this is so, the authors suggest, there is an opportunity for local and regional populations to use their newfound powers to improve the environment. But this assumes that people can actually do something to change entrenched and undesirable farming practices. While not wanting to discount the importance of social agency in interpreting and acting upon wider processes as they impact upon local social structures (see Busch and Juska 1997; Ward and Almas 1997) the difficulty of bringing about change when local economies rely upon the continuation of production regimes based on less-than-acceptable practices has been well-described (see Buttel and Gertler 1982; Lawrence 1987; Lawrence et al. 1992; Lockie and Vanclay 1997; Vanclay and Lawrence 1995). Changes in global-local relations are unlikely, by themselves, to result in environmental benefits—especially in the context of the "global marginalization" of farming (see Buttel 1994). Issues of power and control, consumer demand for particular products, and the state's readiness regulate undesirable production methods will all be important considerations (see Rickson et al. 1997).

In Australia—despite the growth in voluntary community organizations such as Landcare, which bring farmers and community members together in an attempt to implement positive changes in environmental management at the local level (see Lockie 1996;

Lockie and Vanclay 1997)—there is little evidence that the wider problems of land degradation are being addressed. That is, minor changes in (local) production regimes do not appear to be overcoming environmental degradation at the aggregate (national) level. Yet, virtually all proposals to make Australian agriculture more sustainable involve voluntary, not compulsory, actions.

In response to the demands of local and overseas consumers for more wholesome, less chemically-produced, foodstuffs, Australia has sought to develop products which are "clean and green" (see Campbell 1994b; Department of Foreign Affairs and Trade 1994). While the agri-food industries hope consumers will identify *all* Australian-produced foods as having these desirable qualities (see Department of Foreign Affairs and Trade 1994), the dependency of farming on the chemical inputs of agribusiness—and more recently biotechnologies (see Hindmarsh et al. 1998)—may preclude much of Australia's production from falling within this category. Without equating "clean and green" with "organically produced," at present, less than two percent of Australia's food is grown organically (see Lyons 1998; Monk 1998), and low-input chemical strategies have not been widely adopted. At the same time there is a worldwide trend among consumers to purchase commodities which are fresh, produced without chemicals, and grown (and packaged) in ways that do not harm the environment, that is, organically and/or "sustainably" (see Campbell 1996; Diesendorf and Hamilton 1997; Lawrence et al. 1998).

The question remains, then, as to the significance of any move to "clean and green" farming within an agribusiness-dominated agriculture—particularly one in which the food industries will be relying increasingly on the genetically-engineered inputs (Sorj and Wilkinson 1994) that so concern consumers (see Hindmarsh et al. 1998). On the one hand, the growing links between food corporations and farmers would allow quite "direct" and forceful direction of producers if chemical-free and less-processed products are, in fact, the foods of the future (see discussions in Allen 1993). On the other hand, in a world of global sourcing of raw materials for the processed food industry, farmers in Australia may be exploiting both themselves and their lands in an effort to "compete" in a sector progressively dominated by corporations that owe no loyalty to regions, their peoples, or their environments.

Conclusions

Globalization can, in its most basic form, be viewed as a process driving the capitalist economic system and, as a consequence, helping to reorganize the structural characteristics of agriculture. If there is one main finding from the literature on agri-food restruc-

turing, it is that agriculture is coupling with corporate capital in ways that are helping to reconstitute both world markets and the farming systems that serve them. Globalization has also altered the relationship between food and farming. Once, the latter resulted in the former. Now, the former is "created" not only by the corporate reconstitution of generic ingredients via food processing, but also by the media through its symbolic construction of what is good, wholesome, and nutritious (see Campbell and Kraack 1998; Cook 1994).

It is necessary to identify the processes at work in the reorganization of the farm and food production industry, and agri-food restructuring in Australia provides a rich case study of a global phenomenon. It has been a food and fiber exporter for much of its European history, has—at least in past decades—supported family farming through a system of Keynesian-style regulation and support, has now adopted deregulatory, free-market approaches to agriculture, is looking to new (particularly Asian) markets for sales of agricultural produce, is attempting to niche market its products as clean/green, and is relying upon transnational agribusiness (and other forms of corporate involvement) to link local agriculture with global markets.

Interpreting the outcome of these processes poses certain difficulties. For example, the view that there is progressive subsumption—characterized by the declining fortunes of the farming petty bourgeoisie—has been endorsed by some, questioned by others; the meaning of a Fordist and post-Fordist agriculture is uncertain, as is the notion of flexibility; and the question of whether a developing ethos of sustainability will drive agriculture towards a clean/green future has only just begun to be explored. Nevertheless, there is currently little evidence to suggest that agri-food restructuring—in the context of corporate involvement—is producing widespread benefits for Australian farmers or for the environment.

References

- Allen, Patricia (ed.) 1993. *Food For the Future: Conditions and Contradictions of Sustainability*. New York: John Wiley.
- Argent, Neil. 1996. "The globalized agriculture-finance relations: South Australian farm families and communities in a new regulatory environment." Pp. 283–300 in *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*, edited by D. Burch, R. Rickson, and G. Lawrence. London: Avebury.
- Beus, Curtis and Riley Dunlap. 1994. "Endorsement of Agrarian Ideology and Adherence to Agricultural Paradigms." *Rural Sociology* 59:162–84.
- Bokemeier, Janet. 1997. "Rediscovering Families and Households: Restructuring Rural Society and Rural Sociology." *Rural Sociology* 62:1–20.
- Bonanno, Allesandro and K. Bradley. 1994. "Spatial relations in the global socio-economic system and the implications for development planning." Pp. 49–64 in *Agricultural Restructuring and Rural Change in Europe*, edited by D. Symes and A. Jansen. Wageningen: Agricultural University.

- Bonanno, Alessandro, L. Busch, W. Friedland, L. Gouveia, and E. Mingione (eds.). 1994. *From Columbus to ConAgra: the Globalisation of Agriculture and Food*. Kansas: University Press of Kansas.
- Bryant, Lia. 1992. "Social aspects of the farm financial crisis." Pp. 157-72 in *Agriculture, Environment and Society: Contemporary Issues for Australia*, edited by G. Lawrence, F. Vanclay, and B. Furze. Melbourne: Macmillan.
- Burch, David. Forthcoming. 1999. *Transnational Agribusiness and Thai Agriculture: Globalisation and the Political Economy of Agri-food Restructuring*. Singapore: Report to the Institute of South East Asian Studies.
- Burch, David and B. Pritchard. 1996. "The uneasy transition to globalization: restructuring of the Australian tomato processing industry." Pp. 107-26 in *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*, edited by D. Burch, R. Rickson, and G. Lawrence. London: Avebury.
- Burch, David, R. Rickson, and R. Annels. 1992. "The growth of agribusiness: environmental and social implications of contract farming." Pp. 259-77 in *Agriculture, Environment and Society: Contemporary Issues for Australia*, edited by G. Lawrence, F. Vanclay, and B. Furze. Melbourne: Macmillan.
- Burch, David, R. Rickson, and G. Lawrence (eds.). 1996. *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*. London: Avebury.
- Busch, L. and A. Juska. 1997. "Beyond Political Economy: Actor Networks and the Globalization of Agriculture." *Review of International Political Economy* 4:688-708.
- Buttel, Frederick. 1994. "Agricultural change, rural society, and the state in the late twentieth century: some theoretical observations." Pp. 13-31 in *Agricultural Restructuring and Rural Change in Europe*, edited by D. Symes and A. Jansen. Wageningen: Agricultural University.
- Buttel, Frederick and M. Gertler. 1982. "Agricultural Structure, Agricultural Policy, and Environmental Quality: Some Observations on the Context of Agricultural Research in North America." *Agriculture and Environment* 7.
- Campbell, Hugh. 1994a. *Regulation and Crisis in New Zealand Agriculture: the Case of Ashburton County, 1984-1992*. Unpublished Doctoral Thesis. Wagga Wagga: Charles Sturt University.
- . 1994b. "The Internationalisation of Organic Agriculture." Paper Presented at the Agri-food Research Network Workshop, University of Sydney, 12-13 November.
- . 1996. "Organic agriculture in New Zealand: corporate greening, transnational corporations and sustainable agriculture." Pp. 153-69 in *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*, edited by D. Burch, R. Rickson, and G. Lawrence. London: Avebury.
- Campbell, Hugh and A. Kraack. 1998. "Beer and double vision: linking the consumer to the rural through New Zealand television beer advertising." Pp. 159-76 in *Australasian Food and Farming in a Globalised Economy: Recent Developments and Future Prospects*. Melbourne: Department of Geography and Environmental Science, Monash University.
- Commins, Patrick. 1990. "Restructuring agriculture in advanced societies: transformation, crisis and responses." Pp. 45-76 in *Rural Restructuring: Global Processes and Their Responses*, edited by T. Marsden, P. Lowe, and S. Whatmore. London: David Fulton.
- Cook, Ian. 1994. "New foods and vanity: symbolic production in the global food economy." Pp. 232-48 in *From Columbus to ConAgra: the Globalisation of Agriculture and Food*, edited by A. Bonanno, L. Busch, W. Friedland, L. Gouveia, and E. Mingione. Kansas: University Press of Kansas.
- Department of Foreign Affairs and Trade. 1994. *Subsistence to supermarket: food and agricultural transformation in south-east Asia*. Canberra: Australian Government Publishing Service.

- Diesendorf, Mark and C. Hamilton (eds.). 1997. *Human Ecology, Human Economy*. Sydney: Allen and Unwin.
- Fagan, Robert and M. Webber. 1994. *Global Restructuring: the Australian Experience*. Melbourne: Oxford University Press.
- Fulton, Amabel and R. Clark. 1996. "Farmer decision making under contract farming in northern Tasmania." Pp. 219–38 in *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*, edited by D. Burch, R. Rickson, and G. Lawrence. London: Avebury.
- Gare, Arran. 1994/5. "Globalization, Postmodernity and the Environmental Crisis." *Arena Journal* 4:137–160.
- Garnaut, Ross. 1989. *Australia and the North East Asian Ascendancy: Report to the Prime Minister and the Minister for Foreign Affairs and Trade*. Canberra: Australian Government Publishing Service.
- Gleeson, T. and V. Topp. 1997. "Broadacre farming today—forces for change." Pp. 53–74 in *Outlook 97 Agriculture*. Canberra: ABARE.
- Gray, Ian. 1996. "The detraditionalization of farming." Pp. 91–106 in *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*, edited by D. Burch, R. Rickson, and G. Lawrence. London: Avebury.
- Gray, Ian, G. Lawrence, and T. Dunn. 1993. *Coping with Change: Australian Farmers in the 1990s*. Wagga Wagga: Centre for Rural Social Research, Charles Sturt University.
- Halpin, Darren and P. Martin. 1996. "Agrarianism and farmer representation: ideology in Australian agriculture." Pp. 9–24 in *Social Change in Rural Australia*, edited by G. Lawrence, K. Lyons, and S. Momtaz. Rockhampton: Rural Social and Economic Research Centre, Central Queensland University.
- Harworth, Robert. 1997. "Fine sentiments vs brute actions: the landcare ethic and land clearing." Pp. 165–74 in *Critical Landcare*, edited by S. Lockie and F. Vanclay. Wagga Wagga: Centre for Rural Social Research, Charles Sturt University.
- Heelas, Paul, S. Lash, and P. Morris (eds.). 1996. *Detraditionalization: Critical Reflections on Authority and Identity*. Massachusetts: Blackwell.
- Hindmarsh, Richard, G. Lawrence, and J. Norton (eds.). 1998. *Altered Genes—Reconstructing Nature: The Debate*. Sydney: Allen and Unwin.
- Hungerford, Linda. 1996. "Australian sugar in the global economy: recent trends, emerging problems." Pp. 127–38 in *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*, edited by D. Burch, R. Rickson, and G. Lawrence. London: Avebury.
- Kelsey, Jane. 1995. *Economic Fundamentalism: the New Zealand Experience—A World Model for Structural Adjustment?* London: Pluto.
- Kemney, Martin, L. Labao, J. Curry, and R. Goe. 1989. "Midwestern Agriculture in US Fordism: From the New Deal to Economic Restructuring." *Sociologia Ruralis* 29:131–48.
- . 1991. "Agriculture in US Fordism: the integration of the productive consumer." Pp. 173–88 in *Towards a New Political Economy of Agriculture*, edited by W. Friedland, L. Busch, F. Buttel, and A. Rudy. Boulder: Westview.
- Lash, Scott and J. Urry. 1994. *Economies of Signs and Space*. London: Sage.
- Lawrence, Geoffrey. 1987. *Capitalism and the Countryside: the Rural Crisis in Australia*. Sydney: Pluto.
- . 1995. *Futures for Rural Australia: From Agricultural Productivism to Community Sustainability*. Rockhampton: Rural Social and Economic Research Centre, Central Queensland University.
- . 1996. "Contemporary agri-food restructuring: Australia and New Zealand." Pp. 45–72 in *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*, edited by D. Burch, R. Rickson, and G. Lawrence. London: Avebury.
- Lawrence, Geoffrey, I. Gray, and D. Stehlik. 1997. "Changing Spaces: the Effects of Macro-social Forces on Rural Australia." Paper presented at the XVII Congress of the European Society for Rural Sociology, Mediterranean Agronomic Institute at Chania, Crete, Greece, 25–29 August.

- Lawrence, Geoffrey, S. Lockie, and K. Lyons. 1998. "Healthy for You, Healthy for the Environment": Corporate Capital, Farming Practice and the Construction of 'Green' Foods." Paper presented to the Sociology of Agriculture and Food section, XIVth World Congress of Sociology, Montreal 26 July–1 August.
- Lawrence, Geoffrey and F. Vanclay. 1994. "Agricultural change in the semi-periphery: the Murray-Darling Basin, Australia." Pp. 76–103 in *The Global Restructuring of Agro-food Systems*, edited by P. McMichael. Ithaca: Cornell University Press.
- Lawrence, Geoffrey, F. Vanclay, and B. Furze (eds.). 1992. *Agriculture, Environment and Society: Contemporary Issues for Australia*. Melbourne: Macmillan.
- Le Heron, Richard. 1993. *Globalized Agriculture: Political Choice*. Oxford: Pergamon.
- Little, P. and M. Watts (eds.). 1994. *Living Under Contract: Contract Farming and Agrarian Transformation in Sub-Saharan Africa*. Madison: University of Wisconsin Press.
- Lockie, Stewart. 1996. "Farming practice, capital and landcare: subsumption and control." Pp. 25–37 in *Social Change in Rural Australia*, edited by G. Lawrence, K. Lyons, and S. Momtaz. Rockhampton: Rural Social and Economic Research Centre, Central Queensland University.
- Lockie, Stewart and Frank Vanclay (eds.). 1997. *Critical Landcare*. Wagga Wagga: Centre for Rural Social Research, Charles Sturt University.
- Lyons, Kristen. 1998. "Understanding organic farm practice: contributions from eco-feminism." Pp. 57–68 in *Australasian Food and Farming in a Globalised Economy: Recent Developments and Future Prospects*, edited by D. Burch, G. Lawrence, R. Rickson, and J. Goss. Melbourne: Department of Geography and Environmental Science, Monash University.
- McKenzie, David. 1997. "Size Counts As 15,000 Small Farms Vanish." *Australian* 25, June:3.
- McMichael, Philip (ed.). 1994a. *The Global Restructuring of Agro-food Systems*. Ithaca: Cornell University Press.
- . 1994b. "Introduction: agro-food system restructuring—unity in diversity." Pp. 1–17 in *The Global Restructuring of Agro-food Systems*. Ithaca: Cornell University Press.
- Marsden, Terry, P. Lowe, and S. Whatmore (eds.). 1990. *Rural Restructuring: Global Processes and their Responses*. London: David Fulton.
- Marsden, Terry, J. Murdoch, P. Lowe, R. Munton, and A. Flynn. 1993. *Constructing the Countryside*. London: UCL Press.
- Miller, Leigh. 1994. "Agribusiness, Contract Farmers and Land Use Sustainability in North West Tasmania." Paper Presented at the Agri-food Network Workshop, University of Sydney, 12–13 November.
- . 1996. "Contract farming under globally-oriented and locally-emergent agribusiness in Tasmania." Pp. 203–18 in *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*, edited by D. Burch, R. Rickson, and G. Lawrence. London: Avebury.
- Monk, Andrew. 1998. "The Australian organic basket and the global supermarket." Pp. 69–80 in *Australasian Food and Farming in a Globalised Economy: Recent Developments and Future Prospects*, edited by D. Burch, G. Lawrence, R. Rickson, and J. Goss. Melbourne: Department of Geography and Environmental Science, Monash University.
- Mooney, Patrick. 1988. *My Own Boss?* Boulder: Westview.
- Morcia, Mamiel. 1998. "The Dynamics of Global Capital and its Consequences for Agriculture and Rural Spaces." Paper presented to the Sociology of Agriculture and Food section, XIVth World Congress of Sociology, Montreal 26 July–1 August.
- Morvaridi, Behrooz. 1998. "Trade, Contract Farming and Diversification: Environmental Problems in A Sugar-beet Growing Region of Turkey." Paper presented to the Sociology of Agriculture and Food section, XIVth World Congress of Sociology, Montreal 26 July–1 August.

- Napier, Robert. 1997. "Business structures for the future." Pp. 83–92 in *Outlook 97, Volume 2 Agriculture, Proceedings of the National Agricultural and Resources Outlook Conference*. Canberra: ABARE.
- Parson, Hermione. 1996. "Supermarkets and the supply of fresh fruit and vegetables in Australia: implications for wholesale markets." Pp. 251–68 in *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*, edited by D. Burch, R. Rickson, and G. Lawrence. London: Avebury.
- Pritchard, Bill. 1998. "Deregulation and the growth of grains co-operatives." Pp. 43–53 in *Australasian Food and Farming in a Globalised Economy: Recent Developments and Future Prospects*, edited by D. Burch, G. Lawrence, R. Rickson, and J. Goss. Melbourne: Department of Geography and Environmental Science, Monash University.
- Rees, Stuart, G. Rodley, and F. Stilwell (eds.). 1993. *Beyond the Market*. Sydney: Pluto Press.
- Rickson, Roy and D. Burch. 1996. "Contract farming in organizational agriculture: the effects upon farmers and the environment." Pp. 173–202 in *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*, edited by D. Burch, R. Rickson, and G. Lawrence. London: Avebury.
- Rickson, Roy, D. Burch, and R. Sanders. 1997. "New and emerging structures in agriculture: challenges and opportunities for natural resource management." In *Proceedings of the Second National Workshop on Integrated Catchment Management—Advancing Integrated Resource Management: Processes and Policies*. Canberra: ANU.
- Robertson, Graeme. 1997. "Managing the environment for profit." Pp. 75–79 in *Outlook 97, Volume 2 Agriculture, Proceedings of the National Agricultural and Resources Outlook Conference*. Canberra: ABARE.
- Rogers, Murray. 1997. "Food Markets—Capturing Emerging Opportunities." Pp. 27–37 in *Outlook 97, Volume 2 Agriculture, Proceedings of the National Agricultural and Resources Outlook Conference*. Canberra: ABARE.
- (RIRDC) Rural Industries Research and Development Corporation. 1994. "Asian Food: Getting a Bigger Bite." Research Paper No 94/5. Canberra: RIRDC.
- Schapper, Henry. 1997. "Western Australia's agriculture and pastoralism in cultural and ecological perspective." Pp. 97–114 in *Critical Landcare*, edited by S. Lockie and F. Vanclay. Wagga Wagga: Centre for Rural Social Research, Charles Sturt University.
- Share, Perry, H. Campbell, and G. Lawrence. 1991. "The vertical and horizontal restructuring of rural regions." Pp. 1–23 in *Family Farming: Australia and New Zealand*, edited by M. Alston. Wagga Wagga: Centre for Rural Social Research, Charles Sturt University.
- Share, Perry, G. Lawrence, and I. Gray. 1993. "Rural Australia." Pp. 554–83 in *A Sociology of Australian Society: Introductory Readings*, edited by J. Najman and J. Western. Melbourne: Macmillan.
- Schnaiberg, Allan. 1980. *The Environment: From Surplus to Scarcity*. New York: Oxford University Press.
- Smailes, Peter. 1996. "Entrenched farm indebtedness and the process of agrarian change: a case study and its implications." Pp. 301–22 in *Globalization and Agri-food Restructuring: Perspectives from the Australasia Region*, edited by D. Burch, R. Rickson, and G. Lawrence. London: Avebury.
- Sorj, Bernardo and J. Wilkinson. 1994. "Biotechnologies, multinationals, and the agrofood systems of developing countries." Pp. 85–101 in *From Columbus to Con-Agra: the Globalisation of Agriculture and Food*, edited by A. Bonanno, I. Busch, W. Friedland, L. Gouveia, and E. Mingione. Kansas: University Press of Kansas.
- Squires, Victor and P. Tow (eds.). 1991. *Dryland Farming: a Systems Approach*. Sydney: Sydney University Press.
- Symes, David and A. Jansen (eds.). 1994. *Agricultural Restructuring and Rural Change in Europe*. Wageningen: Agricultural University.

- Vanclay, Frank and G. Lawrence. 1995. *The Environmental Imperative: Eco-social Concerns for Australian Agriculture*. Rockhampton: CQU Press.
- Ward, Neil and R. Almas. 1997. "Explaining Change in the International Food System." *Review of International Political Economy* 4:611-29.
- Wolf, Steven and S. Wood. 1997. "Precision Farming: Environmental Legitimation, Commodification of Information, and Industrial Coordination." *Rural Sociology* 62:180-206.
- Yearley, Steven. 1996. *Sociology, Environmentalism, Globalization*. London: Sage.