



The Journal of Peasant Studies

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/fjps20>

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Published online: 07 May 2009.

To cite this article: Philip McMichael (2009) A food regime genealogy , The Journal of Peasant Studies, 36:1, 139-169, DOI: [10.1080/03066150902820354](https://doi.org/10.1080/03066150902820354)

To link to this article: <http://dx.doi.org/10.1080/03066150902820354>

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A food regime genealogy

Philip McMichael

Food regime analysis emerged to explain the strategic role of agriculture and food in the construction of the world capitalist economy. It identifies stable periods of capital accumulation associated with particular configurations of geopolitical power, conditioned by forms of agricultural production and consumption relations within and across national spaces. Contradictory relations within food regimes produce crisis, transformation, and transition to successor regimes. This ‘genealogy’ traces the development of food regime analysis in relation to historical and intellectual trends over the past two decades, arguing that food regime analysis underlines agriculture’s foundational role in political economy/ecology.

Keywords: food regime; hegemony; corporations; environmentalism; food sovereignty; globalisation

Introduction

In the past year or so, in conjunction with an increasingly evident energy shortage, and global warming, a palpable food crisis has commanded public attention across the world. Rising food prices, and a cascade of food rioting, has signaled the end of the era of cheap food. It has also focused awareness of our agricultural foundations, especially as they have become increasingly dependent on fossil fuels. Recent attention to ‘food miles’ in public discourse has raised questions about our ability to continue to transport food, or its components, across the world. Just beneath the surface lurks a larger question, namely when public discourse will acknowledge that global agriculture is responsible for between a quarter and a third of greenhouse gas (GHG) emissions.¹ Under these circumstances, a coherent political-economy and political-ecology of food is of utmost importance – not simply to understand the dimensions of the food crisis, but also to situate the world food system and its crisis within a broader historical understanding of geo-political and ecological conditions. ‘Food regime’ analysis provides this possibility.

It is over two decades since the first formulation of the concept of ‘food regime’, by Harriet Friedmann (1987). This notion stemmed from previous research on the

The author is grateful to Haroon Akram-Lodhi for his helpful comments on the first draft of this paper.

¹The *industrial* food system requires expenditure of 10–15 energy calories to produce one calorie of food, contributing 22 percent of greenhouse gas (GHG) emissions (McMichael *et al.* 2007). Agriculture’s GHG emissions remain unaddressed in Al Gore’s *An Inconvenient Truth* (2006) and Jeffrey Sachs’ *Commonwealth* (2008).

post-World War II international food order, in which Friedmann (1982) charted the rise and demise of the US food aid program, as a geo-political weapon in the Cold War. Following this, a more systematic formulation by Friedmann and McMichael (1989) appeared in the European journal, *Sociologia Ruralis*. Since then, the food regime concept paper has been reprinted and translated, debated, and informed research and teaching in sociology, geography, political science and anthropology.² The 'food regime' concept historicised the global food system: problematising linear representations of agricultural modernisation, underlining the pivotal role of food in global political-economy, and conceptualising key historical contradictions in particular food regimes that produce crisis, transformation and transition. In this sense, food regime analysis brings a structured perspective to the understanding of agriculture and food's role in capital accumulation across time and space. In specifying patterns of circulation of food in the world economy it underlines the agrofood dimension of geo-politics, but makes no claim to comprehensive treatment of different agricultures across the world. Its examination of the politics of food within stable and transitional periods of capital accumulation is therefore quite focused, but nevertheless strategic. It complements a range of accounts of global political economy that focus, conventionally, on industrial and technological power relations as vehicles of development and/or supremacy. It is also complemented by commodity chain analyses,³ dependency analyses,⁴ and fair trade studies⁵ that focus on particular food relationships in international trade. And, finally, there are studies of agriculture and food that focus on case studies,⁶ questions of hunger,⁷ technology,⁸ cultural economy,⁹ social movements,¹⁰ and agribusiness¹¹ that inform dimensions of food regime analysis, once positioned historically within geo-political relations.¹² The difference made by food regime analysis is that it prioritises the ways in which forms of capital accumulation in agriculture constitute global power arrangements, as expressed through patterns of circulation of food.

This essay reviews the construction of the food regime perspective, and its development in relation to historical transformations and intellectual trends. I argue that debates over the composition and significance of a food regime have been productive in expanding its analytical reach (e.g., to include social movement, ecological and nutritional science relationships). I also note that there is an unresolved debate about whether a food regime is currently in place, suggesting that

²Frederick Buttel (2001, 171, 173) wrote: 'Beginning in the late 1980s the sociology and political economy of agriculture began to take a dramatic turn... only five years after the seminal piece – Friedmann and McMichael's 1989 *Sociologia Ruralis* paper on food regimes – was published, the sociology of agriculture had undergone a dramatic transformation... [the] article on food regimes was arguably the seminal piece of scholarship... and 'regime-type' work has proven to be one of the most durable perspectives in agrarian studies since the late 1980s, in large part because it is synthetic and nuanced.'

³e.g., Barndt (2008), Pritchard and Burch (2003), Fold (2002), and Fold and Pritchard (2005).

⁴e.g., Thomson (1987).

⁵e.g., Raynolds, Murray and Wilkinson (2007), Jaffee (2007).

⁶e.g., Hollis and Tullist (1986), Goodman and Watts (1997).

⁷e.g., George (1977), Lappé, Collins and Rosset (1998), Davis (2001).

⁸e.g., Kloppenburg (1988), Perkins (1997).

⁹e.g., Mintz (1986), Rifkin (1992), Dixon (2002).

¹⁰e.g., Borras, Edelman and Kay (2008).

¹¹e.g., Morgan (1980), Burbach and Flynn (1980), Bonnano *et al.* (1994), Kneen (2002).

¹²Cf. McMichael (1994, 1995).

there are different ways in which to frame that question, which can help us to understand contemporary structuring forces in the global food system. Finally, I claim that food regime analysis is key to understanding a foundational divide between environmentally catastrophic agro-industrialisation and alternative, agro-ecological practices that is coming to a head now as we face a historic threshold governed by peak oil, peak soil, climate change, and malnutrition of the ‘stuffed and starved’ kind across the world (Patel 2007). This divide is, arguably, endemic to capitalism, and its food regime at large – generating a rising skepticism regarding the ecological and health impact of industrial food (Lang and Heasman 2004), and a gathering of food sovereignty movements across the world (Desmarais 2007) to reverse the modernist narrative of smallholder obsolescence etched into the development paradigm and current development industry visions of ‘feeding the world’ (McMichael 2008a).

Food regime formulations

Initial food regime analysis set parameters for historical analysis of opposing spatial relations within a political economy of an emerging international food system. Thus, the *first food regime* (1870–1930s) combined colonial tropical imports to Europe with basic grains and livestock imports from settler colonies, provisioning emerging European industrial classes, and underwriting the British ‘workshop of the world’. Complementing mono-cultural agricultures imposed in colonies of occupation (compromising their food systems and ecological resources), nineteenth-century Britain outsourced its staple food production to colonies of settlement (over-exploiting virgin soil frontiers in the New World). Here, the establishment of national agricultural sectors within the emerging settler states (notably USA, Canada, and Australia), *modeled* twentieth-century ‘development’ as an articulated dynamic between national agricultural and industrial sectors.

The *second food regime* (1950s–70s) re-routed flows of (surplus) food from the United States to its informal empire of postcolonial states on strategic perimeters of the Cold War. Food aid subsidised wages, encouraging selective Third World industrialisation, and securing loyalty against communism and to imperial markets. ‘Development states’ internalised the model of national agro-industrialisation, adopting Green Revolution technologies, and instituting land reform to dampen peasant unrest and extend market relations into the countryside. Meanwhile, agribusiness elaborated transnational linkages between national farm sectors, which were subdivided into a series of specialised agricultures linked by global supply chains (e.g., the transnational animal protein complex linking grain/carbohydrate, soy/protein, and lot-feeding). In other words, as the ‘development project’¹³ universalised the ‘national’ model of economic development as a key to completion of the state system, following decolonisation, at the same time a ‘new international division of labour’ in agriculture began to form around transnational commodity complexes (Raynolds *et al.* 1993).

¹³The ‘development project’ refers to a politically-orchestrated initiative following the Second World War, incorporating postcolonial states into an imperial field of power to legitimise and expand capitalist markets as the vehicle of ‘national’ economic growth and modernity (McMichael 1996).

A *third, possibly emergent*,¹⁴ regime (late-1980s–) has deepened this process, incorporating new regions into animal protein chains (e.g., China and Brazil), consolidating differentiated supply chains including a ‘supermarket revolution’ (Reardon *et al.* 2003) for privileged consumers of fresh fruits and vegetables, and fish, and generating populations of displaced slum-dwellers as small farmers leave the land.¹⁵ Part of this conjuncture includes an emerging global food/fuel agricultural complex, now in tension with various forms of localism.¹⁶ As ‘food miles’ add to rising food costs, and mass production runs standardise and process foods, movements such as Food Sovereignty, Slow Food, Community Supported Agriculture, and small-scale organic producers expand their social base on the grounds of democracy, ecology and quality. Whether inspired by alternative social visions, or political (and ecological) exigencies of a food system dependent on fossil fuels (Roberts 2008), such counter-movements contribute to the exhaustion of WTO-style agricultural liberalisation.

Arguably, each period, *and* the transitions between them, have reframed the politics of development and the scope and significance of agricultural and food technologies, including future implications (concerning environmental sustainability, food access and security, energy relations, control of technology, population displacement, nutrition and public health). In this sense, the food regime concept offers a unique comparative-historical lens on the political and ecological relations of modern capitalism writ large. We will return to this below. In the meantime, it is important to trace the lineages of the food regime concept – not only to understand its theoretical underpinnings, but also to emphasise that it is still in formation, especially now with the conjunction of energy, food, and climate crises.

Setting the terms

Friedmann’s basic notion of the food regime is of a ‘rule-governed structure of production and consumption of food on a world scale’ (1993a, 30–1). To illustrate, consider her complex representation of the mid-twentieth century food regime during the development era:

The postwar food regime was governed by implicit rules, which nonetheless regulated property and power within and between nations. The food regime, therefore, was partly about international relations of food, and partly about the world food economy. Regulation of the food regime both underpinned and reflected changing balances of power among states, organised national lobbies, classes – farmers, workers, peasants – and capital. The implicit rules evolved through practical experiences and negotiations among states, ministries, corporations, farm lobbies, consumer lobbies and others, in response to immediate problems of production, distribution and trade. Out of this web of practices emerged a stable pattern of production and power that lasted for two and a half decades.

¹⁴As discussed below, there is a debate regarding whether this is actually a full-fledged, or incipient food regime, or simply a hangover from the previous regime.

¹⁵Global slums now contain one billion people (Davis 2006).

¹⁶The localist project refers to the local/regional certification movement led by the Slow Food Foundation for Biodiversity (Friedmann and McNair 2008), mirrored in the move by supermarkets, from Wegmans to Wal-Mart, to replicate the lead taken in the UK by Tesco and Sainsbury in appropriating the localist project as a new form of profitability via ‘quality’ (Burros 2008, Frith 2006).

The rules defining the food regime gave priority to national regulation, and authorised both import controls and export subsidies necessary to manage national farm programmes. These national programmes, particularly at the outset of New Deal commodity programmes, generated chronic *surpluses*. As these played out, they structured a specific set of international relations in which power – to restructure international trade and production in one state's favour – was wielded in the unusual form of subsidised exports of surplus commodities. In this way agriculture, which was always central to the world economy, was an exceptional international sector. (Friedmann 1993a, 31)

Thus the mid-twentieth century resolution of the agrarian crisis of the 1930s, manifested in the 'dust-bowl' experience for mid-western and southern farmers in the US, involved a substantial reorganisation of the US farm sector with substantial implications for the world. The new emphasis on commodity programs rather than American rural development *per se*, laid a foundation for the surplus export regime in following decades (Winders 2009) as well as converting agricultures elsewhere to the agro-export model. The consequences have generated the recent *World Development Report* (World Bank 2008), with its new-found (nevertheless misplaced) concern for 'agriculture for development' (McMichael 2009b). Friedmann has more recently renamed the postwar regime the 'mercantile-industrial food regime' to emphasise its foundations in agro-industrialisation and its state-protectionist origins. The latter included export subsidies as a 'defining feature', transforming the US into a 'dominant exporter' and in turn transforming 'Japan and the colonies and new nations of the Third World from self-sufficient to importing countries', and Europe into a 'self-sufficient and eventually major export region' (2005, 240).

However, the operative phrase is 'implicit rules', a subtle method of establishing that a food regime, for Friedmann, involves a period of 'relatively stable sets of relationships', with 'unstable periods in between shaped by political contests over a new way forward' (Friedmann 2005, 228). By this Friedmann means that what works, under the specific historical circumstances, is not the direct expression of interest, so much as the distillation of political struggles among contending social groups. Thus she argues that

Each of the past two food regimes was the combined outcome of social movements intersecting with state strategies and strategies of profit-seeking corporations... Of course, the new regime rarely had all the results they had envisioned. Like states and corporations, social movements are rarely careful about what they ask for. (Friedmann 2005, 234)

And so, for the 'first' 'colonial-diasporic food regime' Friedmann argues that it

was framed within a general rhetoric of free trade and the actual workings of the gold standard. The world wheat market that arose in the decades after 1870 was not really anyone's goal. However, vast international shipments of wheat made possible what actors really wanted to do... Wheat was the substance that gave railways income from freight, expanding states a way to hold territory against the dispossessed, and diasporic Europeans a way to make an income (Friedmann 2005, 231–2),

through the new social form of (settler) family farming. She argues that the second food regime was 'even more implicit', since the circulation of agricultural commodities was 'framed specifically not as trade' but as aid, transferred through a mechanism involving 'counterpart payments' by recipient states into local banks to

be used at the discretion of local American advisors (Friedmann 1982). Framing surplus transfers (that eroded local food systems) as ‘aid’ naturalised what were a set of implicit power relationships – Friedmann (2005, 232) comments: ‘When the regime works really well, the consequences of actions are predictable, and it appears to work without rules.’

Conceptual evolution

From the above statements it is clear that the concept of the ‘food regime’ has evolved. One might say that while the initial conception was primarily structural, it has been refined over time with historical prompting – both from intellectual debates and from the transformation of the global food economy itself. The initial Friedmann and McMichael article (1989) blended an insight from regulation theory with one from the world system perspective. Regulation theory suggested the notion of a stable set of relationships through which the food regime articulated with periods of capital accumulation. The emphasis on reducing labour costs in late-nineteenth century European manufacturing with cheap food from the colonies and settler states coincided with regulation theory’s concept of ‘extensive accumulation’. Counterposed to this was the industrialisation of agriculture and the construction of processed, ‘durable foods’ in the mid-twentieth century food regime, as part of the ‘intensive accumulation’ associated with the Fordist period of consumer capitalism, where consumption relations were incorporated into accumulation itself, rather than simply cheapening its wage bill. Periodising history this way, in a rather stylised conceptualisation,¹⁷ provided the opportunity for an unusually sharp critique by Goodman and Watts (1994), who preferred to see agriculture as governed by distinct processes from manufacturing, and so, as Araghi observed, dismissed ‘the concept of a global food regime *tout court* in favour of agrarian particularism’ (2003, 51).¹⁸ As Araghi noted, the critique threw the baby out with the bathwater by discounting a nonetheless significant world-historical periodisation anchored in the political history of capital (Araghi 2003, 50).

In fact, the original 1989 formulation of successive food regimes was constructed around a juxtaposition of successive moments of British, and US, hegemony in governing the capitalist world economy. The food circuits in each regime supported the dominant state’s exercise of power in expanding and sustaining fields of market and ideological dominance. In the mid- to late-nineteenth century regime the British state and capital were at the center of two sets of food flows – tropical foods from the non-European colonies, and temperate foods (meat and grains) from the settler-colonial states (US, Canada, Australia, Argentina, Uruguay, South Africa). These food circuits (alongside raw material imports) underpinned the ‘workshop of the world’ model, assisted by ‘free trade imperialism’, which (for a time) allowed British

¹⁷Note that Le Heron (1993) deployed a regulationist perspective on agricultural restructuring in the second half of the twentieth century, although with considerably more concrete details on the interplay between institutional settings and forms of regulation of agriculture, at all scales, within and beyond the GATT regime. Moran *et al.* (1996) argue for a ‘real regulation’, based in farmer organised policy mobilisations across regions and states.

¹⁸Pistorius and van Wyck used the ‘food regime’ to frame their substantive book, *The Exploitation of Plant Genetic Information*, on the politics of ‘crop development’, noting ‘Friedmann and McMichael (1989)...explicitly refer to the Regulation theory, but they do not explain *how* their conception of food regime fits into that theory’ (1999, 22).

capital and commerce access to European economies and empires. The City of London and the sterling/gold standard lubricated capital's first world market, channeling investment to the various imperial frontiers of extraction (McMichael 1984, 21–7). Within these global circuits the first 'price-governed market' in food emerged, anchored in the American family farming frontier, which produced low-cost wheat relative to that produced on European capitalist farms (Friedmann 1978). Cheap colonial foodstuffs, extracted with catastrophic consequence for non-European cultures (Davis 2001), provisioned British and European capital, which was able to sustain accumulation through imposing patterns of 'underconsumption' on its early generation labour forces (Mintz 1986, Halperin 2005, 91, Araghi 2003).

Subsequently, the US-centered food regime deployed food surpluses to build development states in the Third World. As the model of an internally-articulated national economy, based in the dynamic exchanges between the farm sector and the manufacturing sector, the postwar 'development project' projected a national development model into the postcolonial world. At the same time, food aid provisioned emerging urban labour forces (and their political regimes) with cheap food, stimulating industrialisation, and promoting food dependency in the longer run. Agricultural commodity prices were stabilised during this period by government-managed trade in surplus foods (Tubiana 1989). Meanwhile 'counterpart funds' encouraged agribusiness expansion in the Third World, developing livestock industries supplied with American grains, followed by the introduction of 'Green Revolution' technologies to expand staple food supplies and de-politicise the countryside.

While each food regime deepened global circuits of food, based in distinct agricultural models (from plantations to family farms to specialised forms of agribusiness), securing global hegemony for Britain and the US successively, they also embodied contradictory historical relations. In keeping with the structural tenor of the 1989 article, the authors identified these as follows: in the British-centered food regime, an outsourcing of food production via the conversion of tropical colonies into exporters of sugar, tea, coffee, bananas, palm oil, peanuts and so on, assumed a new dimension in the settler colonies, which expanded on the basis of temperate foods (grains and meat). Whereas the former relationship reproduced a colonial division of labour, the latter (sovereign relationship) resulted in an internal division of labour as a home market for manufacturing capital grew on the agricultural base (McMichael 1984). The settler states, then, prefigured the twentieth-century ideal-typical national model, with articulated economic sectors (manufacturing and agriculture), informing the US model of a farm/factory dynamic as the ideal vehicle and outcome of development (cf. Rostow 1960).¹⁹ In other words, the food regime concept offered an interpretation not only of the agrarian basis of world hegemonies, but also a historicised understanding of the evolution of models of development that expressed and legitimised those power relations.

In the US-centered food regime, the national model of development, based in modernising farm sectors (behind mercantilist/tariff walls, institutionalised in the 1947 GATT agreement), where agriculture and industry would articulate in a virtuous cycle of technologically-based growth, stood in contradiction to the construction of transnational commodity chains linking specialised agricultural

¹⁹It was ideal-typical not only because US farmers were also exporters of food, but also because it assumed that all states could, and would, follow this path (McMichael 2008, 42).

sectors in different world sites. From the Marshall Plan through the Third World Green Revolution, the US state encouraged international agribusiness with export credits and counterpart funds designed to universalise the American farming and dietary models.²⁰ Not only were Korean housewives taught to make sandwiches with imported American wheat, courtesy of the counterpart deposits of *won* in Korean banks, but also American grains-fed livestock (cattle, poultry and hogs) in what Friedmann (1994) has termed the international 'animal protein complex'. In short, during the moment of US hegemony, while the ideology was of national development (certainly supported by selective expansion of the Green Revolution), the reality was an internationalisation of agribusiness chains of inputs, technologies and foodstuffs, eroding the coherence of national farm sectors. The authors characterised this as a significant tension between *replication* and *integration* of farm sectors, arguing that the organising principle of the world economy was shifting from state to capital. This would explain why, for example, the US-centered food regime eventually converted national farm lobbies into corporate lobbies, as small farmers have been increasingly marginalised by agribusiness (Friedmann 2005, 244).

In short, leaving aside the regulation theory strand, food regime analysis clearly historicised, and therefore politicised, our understanding of the strategic role of agrofood relationships in the world economy. Central to this were two formative developments, the universalisation of a nation-state system (as decolonisation occurred within the terms of the 'American century'), and associated processes of agro-industrialisation. A food regime perspective, however, is not intended to offer a comprehensive understanding of food cultures and relationships across the world:

note that this concept has a comparative macro-status, and in no way assumes that all food production and consumption conforms to this pattern. Certainly other forms of production and consumption of food may be marginalised or emboldened by the arrogances of the corporate food system, but there is a substantial arena of food production and consumption beyond that of the food regime. (McMichael 2000, 421fn)

In historicising and politicising food, the food regime perspective opened doors to further development of the concept.

One such door is the social movement door, through which both Friedmann and McMichael have passed. Friedmann's above references to social movements leads her to 'refocus historical analysis on *transitions*' between regimes, where social movements act as 'engines of regime crisis and formation' (2005, 229). By renaming the regimes, Friedmann signals the key role of workers, and farmers, respectively in shaping the 'colonial-diasporic' and the 'mercantile-industrial' food regimes. In the former, working class unrest and migration contribute, as settlers constituted the new frontier of family farmers, who 'could exist only through international trade, and would suffer most from a collapse of the regime' (2005, 236). The unraveling of this regime in the early twentieth century produced a 'new type and significance of

²⁰Friedmann offers a sophisticated discussion of how the 'export of the US model' was 'the outcome of specific practices in the postwar food regime. At the same time, these practices also reflected historical experiences, so that the effects were quite distinct in Europe, the emergent third world, and as we shall see later, in Japan' (1993a, 35). Le Heron (1993) offers a comprehensive account of the political decisions in the making of a globalised agriculture following the collapse of the 'second food regime', with particular Antipodean detail.

farm politics', symbolised in the 'mercantilist' epithet of the second food regime. This was built on the basis of agricultural support and protectionist programs fueling agro-industrialisation behind tariff walls, breached only by a public 'food aid' program. In laying the foundations for a successor 'corporate-environmental' regime, Friedmann identifies contradictions in an unfolding 'green capitalism', where 'a new round of accumulation appears to be emerging in the agrofood sector, based on selective appropriation of demands by environmental movements, and including issues pressed by fair trade, consumer health, and animal welfare activists' (2005, 229).

Similarly, but with a different purpose, McMichael has focused on the transnational mobilisation of peasants (articulating with movements such as Food Sovereignty,²¹ Slow Food, Fair Trade), in opposition to what he has termed a 'food from nowhere'²² regime (2002), or a contemporary 'corporate food regime' (2005). This conception pivots on the original notion of a food regime embodying a historical conjuncture comprising contradictory principles. Just as the dynamics of the previous regimes centered on tensions between opposing geo-political principles – colonial/national relations in the first, national/transnational relations in the second, so the corporate food regime embodies a central contradiction between a 'world agriculture' (food from nowhere) and a place-based form of agro-ecology (food from somewhere).²³ In addition, this formulation focuses attention on the politics of dispossession of the world's small farmers, fisher-folk and pastoralists, including a counter-mobilisation in the name of 'food sovereignty' against the modernist narrative that views peasants as residual (McMichael 2006, 2008a). While Friedmann focuses on the social movements of worker/migrant farmers in the first food regime, as her transitional link to the second regime (absent colonial producers of tropical – and Indian wheat,²⁴ for example), McMichael focuses on social movements from the global South as the key hinge in a current food regime dynamic.

On a broader scale, McMichael's perspective implies that the simplification of industrial agriculture that began with colonial monocultures, and has been universalised through successive food regime episodes, has now reached a fundamental crisis point. It is expressed in the emergence of a transnational movement of smallholders intent on asserting the critical importance of biodiverse and sustainable agriculture for human survival (Desmarais 2007), in addition to the question of stemming the 'planet of slums' phenomenon (Davis 2006, Araghi 1995, 2008), the question of human rights to culturally and nutritionally adequate food, and the reformulation of states, *and development*, around democratised food systems

²¹'Food sovereignty' has been defined by the transnational peasant movement, Via Campesina, as 'the right of peoples to define their own agriculture and food policies, to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives, to determine the extent to which they want to be self reliant, and to restrict the dumping of products in their markets. Food sovereignty does not negate trade, but rather it promotes the formulation of trade policies and practices that serve the rights of peoples to safe, healthy and ecologically sustainable production' (2001).

²²The 'food from nowhere' concept comes from Bové and Dufour (2001) and concerns differentiating craft from industrial agriculture.

²³Campbell (2009) has modified the meaning of food from somewhere to include global food audit relations.

²⁴Davis points out that at the turn of the twentieth century, 20 percent of England's bread was produced from wheat extracted through unscrupulous marketing of Indian grain reserves (2001, 299).

(Patel 2006). At this point in the story, the focus on peasant mobilisation is an acknowledgement that the human and ecological wake created by the ‘globalisation’ of the corporate food regime is the central contradiction of the twenty-first century global food system. Here, ‘the trajectory of the corporate food regime is constituted through resistances: both protective (e.g., environmentalism) and proactive, where “food sovereignty” posits an alternative global moral economy’ (McMichael 2005, 286).

Another food regime?

At this point it is important to address the vexed question as to whether and to what extent we can identify a ‘third food regime’. From Friedmann’s perspective, we have not yet seen the full-scale (hegemonic) establishment of a food regime, with ‘implicit rules’ (framed by social forces) imprinted in the production and consumption of traded foods (which currently divide between industrial and affluent/fresh foods). In contrast, McMichael views the recent neo-liberal world order as resting on a ‘corporate food regime’, containing atavisms of the previous regime, and organised around a politically constructed division of agricultural labour between Northern staple grains traded for Southern high-value products (meats, fruits and vegetables). The free trade rhetoric associated with the global rule (through states) of the World Trade Organisation suggests that this ordering represents the blossoming of a free trade regime, and yet the implicit rules (regarding agro-exporting) preserve farm subsidies for the Northern powers alone, while Southern states have been forced to reduce agricultural protections and import staple, and export high-value, foods.

Despite several formulations of a third food regime, perhaps the most important issue is that the disagreements are not entirely definitional or empirical – rather there is a broader question concerning the status of the concept itself. As a historical concept, it could serve to simply identify the agrofood foundations of historical periods, cycles, or even secular trends of capitalism. In this respect, the ‘food regime’ becomes not a structural formation in itself so much as an attribute or an optic on one or more historical conjunctures. And so: ‘The point is not to hypostatise “food regimes.” They constitute a lens on broader relations in the political history of capital. They express, simultaneously, forms of geo-political ordering, and, related, forms of accumulation, and they are vectors of power’ (McMichael 2005, 272). Thus, the ‘food regime’ can be considered to be simply an analytical device to pose specific questions about the structuring processes in the global political-economy, and/or global food relations, at any particular moment. Here the ‘food regime’ is not so much an episodic structure, or set of rules, but becomes a method of analysis. Arguably, the various representations of a ‘third food regime’ are simultaneously expressions of deployment of the food regime as an analytical device.

As intimated in the 1989 article, the possibility of a decentralised and ecologically-grounded food regime was already an important imaginary (expressed in a range of practices in Southern peasant sites, Northern community agricultures, central Italy and even in Francis Moore Lappé’s prescient *Diet for a Small Planet* of the early 1970s). Four years later, Friedmann (1993a, 51–2) articulated this possibility as follows:

Emergent tendencies have unfolded quickly since the Uruguay Round began in 1986. These prefigure alternative rules and relations. One is the project of corporate freedom

contained in the new GATT rules. The other is less formed: a potential project or projects emerging from the politics of environment, diet, livelihood, and democratic control over economic life. Farmers (who are heterogeneous) must somehow ally themselves in the main contest over future regulation: will it be mainly private and corporate, or public and democratic? What international rules would promote each alternative? The answers depend on the ways that emerging agrofood policies are linked either to accumulation imperatives or to demands raised by popular social movements.

In the meantime, the contours of a third, or new, food regime were sighted from the Antipodean perspective (McMichael 1992, Le Heron 1993, Pritchard 1996, 1998). McMichael, focusing on 'the reconstitution of the state system to support a unified global market', surmised that the passage of a GATT regime

may complete the institutionalisation of mechanisms and norms of global regulation by rendering all states (some being more equal than others) subject to retaliation for unfair trade practices... [where] national sovereignty would be subordinated to an abstract principle of membership in the state system that sanctions corporate rights of free trade and investment access. (1992, 356, 354)

Pritchard focused on regulatory developments in sub-sectors like dairy and wheat in specific regions. Le Heron's (1993) *Globalised Agriculture* formalised the new focus on (early) 'value chains' identified in research by Friedland (1994), Llambi (1994) and Reynolds (1994), on the rise of 'non-traditional exports' of fruits and vegetables from the global South, and shaping subsequent research on various commodities such as shrimp, poultry, canned seafood, canned pineapple and fresh fruit from Thailand (Goss and Burch 2001), green beans, baby carrots and corn, and snowpeas from Kenya (Dolan and Humphrey 2000), corporate tomatoes from Mexico (Barndt 2008),²⁵ and Pritchard and Burch's global analysis of different sources and forms of tomato production (2003). In the early days of 'globalisation', Le Heron (1993, 191–2), extrapolating from the New Zealand experience,²⁶ wrote:

Some researchers see in the 1980s–90s the erosion of the second food regime which grew around the grain-livestock and durable foods complexes supplying rising demand in the developed nations. They attribute this decline to the duplication of productive capacity in developing countries and declining governmental powers over the principal agents of restructuring, the TNCs. The recent appearance of a particularly dynamic component of the world food system, the global fresh fruit and vegetable industry, is perhaps the harbinger of a third food regime. In this investment nexus, transnational organisations have been prominent from the beginning... Globalised agriculture can be considered a

²⁵Dolan (2004) and Barndt (2008) represent research strategies concerned with tracing out the spatialised, racialised and gendered sub-contracting relations surrounding horticultural production systems.

²⁶Pritchard has observed: 'New Zealand's agricultural sector was thoroughly liberalised from the mid-1980s, making it a kind of test-case for what an incipient global agricultural system might look like. Reflecting on these issues in his book *Globalised Agriculture: Political Choice*, Le Heron (1993) argued that the advancement of Uruguay Round objectives would lead inexorably to the de-nationalisation of food systems, as circuits of capital in agrofood production, exchange and reproduction become beholden to footloose global corporations and financial institutions' (forthcoming). Moran *et al.* (1996) use New Zealand and French rural political mobilisations to specify national regulatory variation, which they argue differentiates agro-commodity chains within food regimes at large.

by-product of the international crisis in agriculture, which accompanied and was linked to the more general crisis in the 1970–90s in world capitalism.

The point of this perspective was that in the early 1990s a discernible transnational corporate ‘global sourcing’ of foods was most obvious in the technologies of seed modification, cooling and preserving, and transport of fruits and vegetables as non-seasonal, or year-round, access for affluent consumers became available through the management of archipelagos of plantations across the global South – giving rise to what Friedmann (1991) called the New Agricultural Countries (NACs), as counterparts to the Newly Industrialising Countries (NICs). In this new division of world agricultural labour (cf. Raynolds *et al.* 1993) it was noted at the time that:

transnational corporations typically subcontract with Third World peasants to produce specialty horticultural crops and off-season fruits and vegetables. They also process foods (such as fruit juices, canned fruits, frozen vegetables, boxed beef, and chicken pieces), often in export processing zones, for expanding consumer markets in Europe, North America and Pacific-Asia. (McMichael 1996, 105)

Enabling this global process was the phenomenon of the ‘Second Green Revolution’ (DeWalt 1985) – distinguished from its antecedent by its shifts: from public to private initiative, from staple grains to affluent foods (animal protein, fruits and vegetables, chemical feedstocks), and from domestic to global markets. The international division of agricultural labour was essentially an extension of developments within the US-centered food regime, involving a rising share (73–82 percent) of the OECD in the volume of cereal exports (1970–96), and the global South importing 60 percent of world cereal volumes. At the same time the NACs expanded their share of a tripling of the world market for fruits and vegetables, and the OECD countries became the world’s major suppliers of plant varieties. But the significant shift was *political* (Pistorius and van Wyk 1999, 110–11). As Pistorius and van Wyk (1999, 51) put it, re-defining the food regime as an agro-food order:

The advent of the Third Agro-Food Order has revealed a tendency for the state as the pivot of crop development to be replaced by private industry. Since the 1980s, the growth of public investment in agricultural R&D has declined, private industry has obtained a greater say in the allocation of public agricultural R&D funds, while private investment in agricultural research has risen rapidly. This development has been accompanied by a thorough restructuring of the organisation of the plant breeding sector, which has given rise to the formation of industrial crop development conglomerated, based in OECD countries. Given the accumulation of unrivalled financial and technological capacity within these industrial conglomerates, they seem to become the central actors and dynamic force of crop development in the Third Agro-Food order.

The privatisation of agricultural research was a key marker of the ‘globalisation project’²⁷ – a politically-instituted process of economic liberalisation privileging corporate entities and rights in the food system, with respect to crop development

²⁷The ‘globalisation project’ represents ‘an emerging vision of the world and its resources as a globally organised and managed free trade/free enterprise economy pursued by a largely unaccountable political and economic elite’ (McMichael 1996, 300).

and the management of ‘food security’ – as a service performed not by nation-states, but by transnational corporations through the world market. It suggested another formulation, the ‘corporate food regime’: which ‘carries legacies of the previous food regimes, nevertheless expressing a new moment in the political history of capital’, reversing the political gains of the welfare and development eras, by ‘facilitating an unprecedented conversion of agriculture across the world to supply a relatively affluent global consumer class. The vehicle of this corporate-driven process is the WTO’s Agreement on Agriculture, which... institutionalises a distinctive form of economic liberalism geared to deepening market relations via the privatisation of states’ (McMichael 2005, 273). A key legacy of the previous food regime was managed overproduction, via subsidy structures hidden from plain view, formally legitimising a principle of ‘free trade’ across the board, as members would lower barriers to agricultural trade and submit to the minimum five percent import rule – facilitating ‘orderly’ disposal of Northern surpluses by transnational agribusiness. In this sense, the food regime is ‘not so much a political-economic order, as such, rather it is a vehicle of a contradictory conjuncture, governed by the “double movement” of accumulation/legitimation’ (McMichael 2005, 274). This particular formulation, therefore, focused on the political reconstruction of a regime institutionalising elements of the previous regime (transnationalism and managed Northern surpluses) in different, multilateral arrangements represented as state-authored market liberalisation.

To establish the central contradiction of this new formulation, McMichael (2005, 274) argued that ‘the *corporate* food regime embodies the tensions between a trajectory of “world agriculture” and cultural survival, expressed in the politics of food sovereignty’. The point of this rather stark contrast was to situate the food regime within the broader historical conjuncture, whose distinctiveness is ‘how dispossession is accomplished. Briefly, where the “development project” socialised security, the “globalisation project” privatises security. These phases both represent political solutions to material needs’ (McMichael 2005, 275). Here, the notion of a ‘corporate food regime’ serves as a double reminder. First, that the concept of the food regime enables historicisation and politicisation of particular global political-economic conjunctures. And second, that for all the focus on ‘internal’ details of food regimes, such as key commodity chains, the rise of retailing and the politics of consumption, regulation of quality and standards, differentiation of diets, organics, niche marketing, and so on – all legitimate dimensions of the contemporary food system – the historic meaning and impact of the food regime, as lens, is more substantive. There is little doubt, for instance, that the trajectory of this so-called ‘corporate food regime’ is such that it poses a fundamental threat to the survival of a substantial proportion of the inhabitants of the planet (especially those who do not participate in the global marketplace), and to the ecology of the planet.

Since the initial Friedmann and McMichael article of 1989, these authors have diverged in focus, laying groundwork for distinct (but not necessarily contradictory) understandings of what ‘food regime’ might mean. Whereas McMichael values the notion of a ‘corporate food regime’ characterising the neo-liberal world order, Friedmann is more cautious about identifying such a phenomenon at present, choosing instead to speak of an emergent ‘corporate-environmental’ food regime (2005). Consistent with her institutional interest – both formal (rules and

regulations) and informal (beliefs, norms, implicit rules), Friedmann argues that this would-be regime,

like past food regimes, is a specific constellation of governments, corporations, collective organisations, and individuals that allow for renewed accumulation of capital based on shared definition of social purpose by key actors, while marginalising others... Unlike the postwar regime, which standardised diets, it is likely to consolidate and deepen inequalities between rich and poor eaters. (2005, 228)

Paying attention to the reconfiguration of old institutions, such as food aid, farm subsidies and marketing boards, and consumer food subsidies, Friedmann (2005, 249) surmises:

A new regime seems to be emerging not from attempts to restore elements of the past, but from a range of cross-cutting alliances and issues linking food and agriculture to new issues. These include quality, safety, biological and cultural diversity, intellectual property, animal welfare, environmental pollution, energy use, and gender and racial inequalities. The most important of these fall under the broad category of environment.

Friedmann finds the 'lineaments' of a corporate-environmental food regime in converging environmental politics and the reorganisation of retailing food supply chains, subdivided by class diets, and represented, for example, in the US by Whole Foods ('a stunning appropriation of a 1960s counter-cultural term') and WalMart, catering respectively to 'transnational classes of rich and poor consumers' (Friedmann 2005, 252). As trade disputes among governments in the WTO have stalled, in part over national standards, giving rise to 'green protectionism' (Campbell and Coombes 1999), private capital has taken the lead in setting (and often raising) food standards in context of negotiating certification and brand image profitability in relation to 'social movements of consumers, environmentalists, and others' (Friedmann 2005, 253). Complementing public regulation of the food system, private standard setting differentiates consumers between those served by 'standard edible commodities' (WalMart) and those consuming products from 'quality audited food chains' (Whole Foods). As Friedmann puts it: 'the distinction between fresh, relatively unprocessed, and low-chemical input products on one side, and highly engineered edible commodities composed of denatured and recombined ingredients on the other, describes two complementary systems within a single emerging food regime' (2005, 258). Demurring on outcomes, Friedmann notes that 'while the rise of "quality" agrofood systems may herald a new "green capitalism", it may serve only privileged consumers within a food regime rife with new contradictions' (2005, 257). It is in the vortex of 'green capitalism' that Friedmann finds the key tension: 'states, firms, social movements, and citizens are entering a new political era characterised by a struggle over the relative weight of private, public, and self-organised institutions' (2005, 259), including how to redefine 'public', democratise agrifood systems, and incorporate Lang and Heasman's concept of 'ecological public health' (2004).

In contrast to Friedmann's scenario, or as a 'play within a play', McMichael's concept of the 'corporate food regime' has had a specific purpose, namely to focus attention on how instituting the full-scale dispossession of an alternative agriculture is licensed by the so-called 'globalisation project'. The latter, essentially a recalibration of 'development' at the global, rather than the national, scale,

accentuates the narrative of peasant extinction in the modern world. Whether focusing on dispossession as the fundamental contradiction is normative or not, the issue is ultimately epistemological.²⁸ That is, regarding smallholding as irrational is itself irrational,²⁹ when we consider that industrial agriculture is undermining conditions of human survival, through its intensive dependence on fossil fuels, its accounting for about a third of GHG, its degradation of soil (intensifying dependence on petro-fertiliser), its destruction of biodiversity, and ultimately its depletion of cultural and ecological knowledges about living and working with natural cycles by wiping out smallholder diversified farming, shown to be more productive and more environmental than specialised industrial farming (Pretty *et al.* 2006, Weis 2007, 164–8, Altieri 2008, and cf. IAASTD 2008).

The ‘corporate food regime’ defines a set of rules institutionalising corporate power in the world food system. While the WTO is the key institution, there are associated trade agreements like the North American Free Trade Agreement (NAFTA) that replicate the asymmetry of the WTO protocols, which preserve Northern agricultural subsidies behind a façade of economic liberalisation, directed at states in the global South. As Friedmann suggests, ‘farm lobbies’ in the global North became agribusiness lobbies as an outcome of the postwar food regime, and managed to institute mechanisms in their respective states, and through the Uruguay Round negotiations, which were ostensibly about stemming the escalation of farm subsidies and managing the crisis of overproduction, and dumping of surpluses in the world market during the 1970s and 1980s, in the wake of the postwar regime. Prior to the formalisation of the WTO Agreement on Agriculture, the EU began switching from its original Common Agricultural Policy (CAP) farm price support policies to US-style government direct payments to producers, thereby decoupling production costs from prices, which, allowed the formation of a single ‘world price’. Thus,

For traders, low commodity prices enable commodity dumping in the world market (assisted by export subsidies, especially European), forcing local prices down at the expense of small farmers. . . . Despite the rhetoric of free trade, the Northern agenda is realised through a corporate-mercantilist comparative advantage in a highly unequal world market. (McMichael 2005, 278–9)

Alongside of the displacing effects of this system of disposal of cereal surpluses from the North, has been the proliferation of agro-exporting from the global South, much of it mandated through Structural Adjustment Policies devised by the IMF and World Bank, in the name of ‘feeding the world’. The consequence has been to

²⁸That is, peasant mobilisation suggests this narrative is not being conceded. This is a political intervention, with claims transcending modernist/Marxist teleology. Bernstein (2008), for example, misconstrues an epistemic for a normative position, by associating the descriptor of La Via Campesina’s politics, ‘the peasant way’, with a nostalgic or populist discourse. This understanding de-historicises peasant politics by imposing a capital lens on a movement that consciously challenges orthodox, and fetishised, understandings of food as a product/input, rather than a socio-ecological relationship in which smallholders (and all of us) have a political stake (McMichael 2008b).

²⁹Marx understood this well enough, when he observed: ‘The moral of the tale . . . is that the capitalist system runs counter to a rational agriculture, or that a rational agriculture is incompatible with the capitalist system (even if the latter promotes technical development in agriculture) and needs either small farmers working for themselves or the control of the associated producers’ (quoted in Foster 2000, 165).

displace land for domestic food production, integrating small farmers into tenuous contract relations, or simply regrouping the dispossessed on agro-industrial estates, or in mushrooming slums. Conservative (FAO) estimates suggest upwards of 30 million peasants lost their land in the decade after the WTO was established (Madeley 2000). The functional consequence of such a regime of course has been to swell the reserve labour force for manufacturing and service industries at the same time, underpinning the militarised proliferating export processing zones across the global South:

The paradox of this food regime is that at the same time as it represents global integration as the condition for food security, it immiserates populations, including its own labour force. The perverse consequence of global market integration is the export of deprivation, as 'free' markets exclude and/or starve populations dispossessed through their implementation. In turn, dispossessed populations function as reserve labour, lowering wages and offering the possibility of labour casualisation throughout the corporate empire. (McMichael 2005, 285)

Refocusing the food regime

The articulation of the products and consequences of the corporate, or neo-liberal, food regime with patterns of accumulation in manufacturing and service industries refocuses the question of the food system's compositional, and contextual, relations. Araghi (2003) addresses this head-on, arguing the food regime is a 'political regime of global value relations'. Here food is intrinsic to capital's global value relations, insofar as it is central to the reproduction of wage labour, and, indeed, other forms of labour coming under capital's sway. The focus remains on the relations of capital, rather than food itself, which is, rather, a means to the end of provisioning and managing the labour relation. In his view, what Friedmann and McMichael called the 'second food regime', was actually an interregnum in the history of capital, and was more appropriately understood as an 'aid-based food order of an exceptionally reformist period of world capitalism' (Araghi 2003, 51). In other words, global value relations – the organising principle for the British-centered regime, and arguably, for the late-twentieth century (neo-liberal) regime – were compromised in the postwar Keynesian/Fordist compact of 'embedded liberalism'.

The question arises, then, what is the appropriate institutional complex in which to situate a 'food regime'? While First World states implemented the UN 'social contract', empire was reformulated through neo-colonial relations, with the food aid program directing food exports towards securing the loyalty of Third World states on the Cold War perimeter with cheap food to lower manufacturing costs and create new food dependency. Unlike the British state, the US reconstructed the capitalist world order 'not through formal empire, but rather through the reconstitution of states as integral elements of an informal American empire' (Panitch and Gindin 2004, 17). The counterpart (of an overproducing farm sector) was rising wages in the First World serving to intensify accumulation through the consumption of animal protein and 'durable foods' (Friedmann 1991). One might argue with Araghi that in each food regime, a particular geo-political configuration organised a set of production and circulation relations of food that maintained capitalism's empire. That is, the materiality and/or expression of value relations are

subject to specific socio-political configurations of the wage relation in the politics of the state system.

Nonetheless, Araghi's intervention poses a significant challenge to the stylised patterning of the first two food regimes. The value relations perspective reminds us that under capitalism, food is an exchange-value, first, and a use-value second. In other words, food regime analysis of forms of capitalist modernity is both more systematic and historical to the extent that it resists the temptation to take food as its point of departure. The exemplar of this is perhaps *Sweetness and Power. The Place of Sugar in Modern History* (1986), by Sidney Mintz, whose title signals the power relations wherein sugar, or more precisely, sucrose, has been, historically, an item of status emulation, a caloric fuel for the European proletariat (whose slave counterpart experienced similar 'underconsumption'), and an essential ingredient in modern 'fast food' consumerism. Araghi uses the 'food regime of capital' phrasing to emphasise food as not just a commodity, but as a historic commodity-relation, re-centering agriculture in the analysis of capitalist transformations. Thus Araghi (2003, 51, emphasis added) argues:

This revised understanding of food regimes, not as components of some abstract (and nation-state based) concepts of economic regulation, but much rather as the political fact of world historical value relations, is crucial to a more nuanced and differentiated understanding of what we may call 'embedded imperialism'. The latter approach... – posits imperialism... in connection with world historical value relations and food regimes of capital. This perspective brings agriculture and food to the centre of analysis not as a result of a postmodern retreat into locality, anti-urbanism and neo-populist nostalgia for rurality, but precisely because *global agriculture and food are inseparable from the reproduction of labour power*.

For Araghi, this inseparability is the governing principle – meaning that the structures of capital accumulation across time and space involve distinctive forms of food production and consumption that cannot be understood without situating them in the broader, patterned circuits of capital. Central to this approach is the juxtaposition of relationships of 'overconsumption' and 'underconsumption' of food, corresponding to class relations on a world scale.

The 'food regime of capital approach' not only politicises the world food order, but also it focuses on the fungibility of food, as a commodity. We have seen this with the concept of 'crop development' and its relationship to corporate strategies of 'substitutionism', whereby tropical products (sugar, palm oil) are displaced by agro-industrial byproducts (high-fructose corn syrup, margarine) and cereals are rendered functionally equivalent, such as in feedstuffs and biotechnology feedstocks (Goodman *et al.* 1987). We are now seeing it massively in the current socially and ecologically inappropriate 'agrofuels project'. Here, value relations result in the conversion of agriculture to meet short-sighted alternative energy/emissions targets at a time in which the market episteme governs problem framing and solving. The agrofuels project represents the ultimate fetishisation of agriculture, converting a source of human life into an energy input at a time of rising prices (McMichael 2009a). A 'food regime of capital' perspective incorporates this development into our understanding of politicisation of agriculture within the neo-liberal regime at large.

In shifting the focus from institutional to value relations, Araghi refocuses an enduring dimension of the original food regime analysis, namely its attention to the political history of capital – as expressed or realised through the structuring of global

food relations. One can read into this perspective that in the history of capital, there are cyclical moments and expressions within capital's food regime relations. Converging on this, perhaps,³⁰ McMichael and Friedmann (2007, 295–6) recently rephrased the food regime in a chapter on supermarkets, observing:

just as retailers are expedient in appropriating discourses, and sometimes practices of alternative food systems, so corporate agriculture is premised on the appropriation of food cultures around the world . . . When considering such comprehensive transformations, the *historical* concept of food regimes points to two useful distinctions: between periods of stability and transition, and between the destruction of old relations and the emergence of new ones. While our early accounts of food regimes focused on periodising world history from the perspective of relatively stable arrangements of agricultural production, trade, and transformation into food commodities, our recent efforts turn to periods of transition. To put it simply, a food regime analysis of contemporary conditions would highlight the profound conditions of instability of the agrofood system.

In short, whether and to what extent another food regime can be identified depends on the terms of reference, which in turn depends on the terms of comparison (with previous such constructs) and one's methodological point of departure. Perhaps more promising, in the context of these developments (both historical and intellectual), one reason why it has become difficult to specify the 'food regime' as any one construct is the appearance of new dimensions in food regime analysis, to which we now turn.

Productivity of the food regime concept

There are several new departures, forthcoming in a special issue of *Agriculture and Human Values* on updating food regime analysis, important to address. To begin, Pritchard addresses, and argues against, the idea of a third food regime thus far. He suggests that a key question for food regimes scholars is 'how to theorise agriculture's incorporation into the WTO?' – translating this issue into 'the question of whether agriculture's incorporation into the WTO should be understood as facilitating a free market "third" food regime, or if it represents a state-centered carryover of the crisis of the second food regime, which it is incapable of resolving.' And his answer is that the collapse of the Doha Round negotiations in July 2008 'makes it possible, for the first time, to offer a conclusive assessment to this question' – his assessment being that the WTO is a 'carryover from the politics of the crisis of the second food regime, rather than representing a putative successor' (Pritchard forthcoming). This assessment is consistent with his claim that 'The essential feature of the food regimes approach is that it is best used as a tool of hindsight. It can help order and organise the messy reality of contemporary global food politics, but its applications are necessarily contingent upon an unfolding and unknowable future' (Pritchard 2007, 8). And this claim, of course, revisits the question of the status of the food regime concept.

One way of addressing this puzzle is to query the separation, and juxtaposition, of 'states' and 'markets' framing Pritchard's case. Fundamental to previous conceptions of food regimes has been the observation that food circuits are politically constructed, and in fact institutionalised in one way or another. All markets are political

³⁰ Another interpretation is the reluctance of the authors to commit to a definitive characterisation of a 'third food regime', either because the terms of reference are changing themselves, or because of different emphases.

constructs, and so a 'free market' regime is that in name only, and the important point is to see how and why that discourse is deployed and institutionalised. As Pritchard notes, the WTO has concentrated the competitive and sovereign relations of a quite unequal state system, not merely being the 'organisational vehicle of globally powerful sovereign states', nor being a 'supra-national entity with independent agency to implement free market agriculture' (forthcoming). The WTO certainly did evolve to manage the crisis following the collapse of the 'second food regime', and in that sense did not represent a clean-break successor regime. On the other hand, given the paucity of cases, and previous observations that the contradictory relations in the first regime were conditions for resolution in the second, this might be extended to an understanding of the constitution of a 'third regime'. Pritchard's position, however, is that 'the WTO encapsulated but did not move beyond the crisis of the second food regime' (forthcoming).

Arguably, the existence of the WTO is one thing, and its paralysis expresses (and reinforces) the serious asymmetries of the state system, but its protocols have at the same time enabled a massive corporate consolidation and assault on smallholder agriculture behind the backs, as it were, of the negotiators (distracted by the trade paradigm from the social and ecological contradictions attending such arrangements).³¹ By identifying the demise of the WTO, as the centerpiece of a possible third food regime, Pritchard draws attention to its contradictory political role in a world where agro-export intensification has empowered a set of states in the global South known as the Group of 20 (G-20). That is, power relations have altered as a consequence of the combined liberalising effects of the Structural Adjustment and WTO regimes. What is noteworthy here is that behind the backs of the trade institutions agribusiness power has deepened through integrating the global food system, altering the geography of power in the state system itself, increasingly at odds with the initial power structure informing the WTO regime itself. Pritchard's notion of a 'hangover' is insightful, and helps to underline the seismic shifts underway in the global food system. His intervention suggests the need for a double vision: viewing the food regime as constituted through the state/market relationship, nevertheless recognising that the scope and modalities of 'market rule' are always changing, reflecting geo-political, competitive, technological, social and legitimacy concerns. The question remains whether and to what extent a private food regime is embedded in and behind the institutional trappings of the multilateral system.

This is the implication of the argument by Pechlaner and Otero (2008) for a third, 'neoliberal food regime', insofar as trade liberalisation and corporate-friendly intellectual property rights (IPR) protocols link neoliberal regulation and biotechnology. Using the NAFTA framework as their case, these authors argue that while 'the anticipated third regime is still finding its stasis' (Pechlaner and Otero 2008, 2), its impact depends ultimately on 'neoregulation' (of liberalisation and IPR) by states interpreting trade agreements, as well as the strength of resistance. For Pechlaner and Otero, the 'inter-relationship between regulatory change and genetic engineering are integral to the emerging third food regime', in which biotechnology is the 'central technology for capitalist agriculture' (2008, 2). Again, this is a significant dimension of

³¹Deploying Cutler's concept of the 'private regime' (2001), Peine (2009) argues from the vantage point of the Brazilian soybean agro-exporting economy, that a privatised agribusiness regime has emerged through the backdoor, via a series of appeals to the Dispute Settlement Board of the WTO to advance corporate/state trade agendas.

food regime analysis, grounding the ‘abstraction from ecology and entitlements associated with a world agriculture... prefigured in the biological and socio-economic blueprints of the gene revolution and the WTO’s Agreement on Agriculture’ (McMichael 2005, 282). Through their region-specific case study, Pechlaner and Otero are suggesting in fact that this blueprint will take different forms insofar as it depends ultimately on (multilaterally-situated) state decisions in the construction of food relations. Mindful of the groundswell of opposition to this regime among Mexican *campesinos*, the authors conclude that these decisions ‘will be highly influenced by the force of local resistance. Consequently, we argue that, despite the prevailing trends, sufficient local resistance to the technology could modify, or even derail, the technology’s role in individual nations, and, accordingly, in the unfolding food regime as a whole’ (Pechlaner and Otero 2008, 2). While the technology dimension is a critical component, the contestation of agricultural biotechnology is, arguably, integral to the corporate food regime, insofar as it is organised in relation to the destruction of indigenous and local knowledges, and livelihoods. In other words, a food regime’s structure is dialectical, rather than unilinear.

Burch and Lawrence, who have linked the rise of the retailing sector, and its focus on ‘own brands’ as a competitive strategy vis-à-vis food manufacturers, to an argument about the appearance of a ‘third food regime’ (2005, and see 2007), resituate food regime history in context of the transformation of financial relations. Specifying a ‘financialised food regime’, Burch and Lawrence (2009) claim:

What is new, though, is the role played by a number of financial institutions and instruments that have the capacity to re-organise various stages of the agri-food supply chain, and to alter the terms and conditions under which other actors in the chain can operate. In the case of the private equity company, for example, we see a fraction of capital which views the agri-food company – whether it is a third-party auditor, an input supplier, a farm operator, a food manufacturer or a retailer – as a bundle of resources which provide opportunities for a quick profit, which may or may not involve a restructuring, but which will eventually return the enterprise to the share market and then move on to another bundle of resources.

Further, Burch and Lawrence argue that financialisation becomes endemic to the food industry, from supermarkets establishing their own financial services in partnerships with banks, acting like private equity companies, ‘realising shareholder value by exploiting corporate assets which were previously seen as passive investments’, to food manufacturing companies generating ‘rental income from licensing of brand names, or sub-contracting the production of internationally famous products, such as Coca-Cola, while charging local producers monopolistic prices for the supply of necessary ingredients and other intermediate inputs’ and new income streams generated (and patented) by nutraceuticals and functional foods produced by food/chemical companies (forthcoming).³² Clearly analysis of the

³²Complementing this scenario, financialisation can be understood as a measure of general political de-regulation, and because ‘agro-industrialisation is being rapidly globalised through the mobility of financial capital, and its ability to rapidly concentrate, centralise and coordinate global agribusiness operations’ (McMichael 2005, 288). Via Campesina (2004, 2) has noted that ‘now capital is not content to buy labour and hold land as private property, but it also wants to turn knowledge, technology, farm technologies and seeds into private property as part of a strategy of unification of agrofood systems across the world.’

restructuring of the food industry – in this case its retailing arm – is a significant dimension of food regime analysis. The focus on financialisation is timely, and possibly portends the further centralisation of the corporate food sector as the global financial crisis unfolds.

Dixon (2009) advances an altogether quite different, but nonetheless critical, nutritional perspective on food regimes. Her argument is framed by the rise and fall of the ‘nutrition transition’, as a benchmark of modernity and positive national development. The transition, from plant-based diets towards consumption of animal protein, oils and fats, processed sugars and processed carbohydrates, is typically associated with rising affluence. From this basic association has arisen a policy focus on nutritionalisation of the food supply (greater dietary diversity and available energy leading to positive public health outcomes). Within this movement class diets have distributed healthy diets to affluent consumers, and highly processed high calorie foods for poorer populations, the resulting explosion of malnutrition (associated with obesity) paralleling a persistent under-nutrition for a considerable portion of humanity. Dixon identifies these latter phenomena as the crisis phase of the nutrition transition, with ‘diseases of affluence’ appearing alongside global regions of hunger. Underpinning this crisis is a ‘cultural economy’ involving nutritionalisation of modern food systems, based in a science of the ‘metabolic fate of food’ as a form of governance, that is, ‘the co-optation of nutrition science to extract surplus value and authority relations from food, and is most transparent when framing corporate strategies and public policies in terms of nutritional disease and health-wealth advancement’ (Dixon 2009). Dixon breaks new ground in tracing nutritionalisation of food systems as an ‘unbroken socio-technical and knowledge revolution’ from the identification of the calorie in the late-nineteenth century, that is, the ‘capacity to quantify human energy introduced “scientific eating” into public policy and legitimised the agrofood import-export complexes that underpinned the first and second food regimes’ (2009). Her contribution to food regime analysis alerts us to the increasingly contested nature of the ‘search for nutritional and diet-based ontological security’ in a world of shrinking dietary diversity and natural resources, a legitimacy crisis of nutritional science (authority) and corporate nutritionalisation (vs. viable cuisines or cultural diets) as unwanted side-effects mount.

Finally, Campbell (forthcoming) develops the environmental dimension of food regime analysis, elaborating Friedmann’s ecological sensibility, and her use of Polanyi to address ‘the destructive power of distanced and socially disembedded food relations’.³³ As Campbell (forthcoming) sees Friedmann’s arguments:

Two key relations (echoing much of her earlier work) emerged as lying at the heart of unsustainable relations in the two historical food regimes: *distance* (between production and consumption) and *durability* (of key food commodities like wheat). Her argument was that a ‘sustainable’ food regime needed to subvert these dynamics and create sites for re-embedding food in local settings. The positive outcome that could be achieved through subversion of distance and durability was to enable a turn towards locality and seasonality: thus re-embedding food within locally and ecologically-appropriate food systems.

Taking his cue from Friedmann’s previous work on ecology (1993b, 2000, 2003), Campbell introduces the concepts of ‘ecologies at a distance’, and ‘ecological

³³This is a theme returned to in Friedmann and McNair (2008).

feedback', into food regime analysis, noting that prior food regime relationships invisibilised their ecological impacts. And in the contemporary, more explicitly global/integrated, era these impacts have begun to feed back into the cultural dynamics of food regimes, as environmental and public health concerns mount. Campbell views food regime cultures as markers of legitimacy and stability, especially from the ecological point of view of environmentalism: 'The durable cultural logic of each was characterised by the ability to disguise what Marx had, during [the] very period, described as an irreparable metabolic rift that increasingly disrupted the interaction between human beings and nature' (forthcoming). To illustrate, for the second food regime, he notes how cultural framing of pesticides within a technological optimism began unraveling with the critique stemming from Rachel Carson's *Silent Spring* (1962). Developing Friedmann's identification of social movement power to legitimise or challenge regime cultures, he focuses on contradictory tendencies in the current world food order, especially a 'food from nowhere regime'. The latter, built on the cultural legitimacy of 'cheap food' has 'an emerging acute problem of cultural legitimacy', stemming from declining trust in science, environmental mobilisation, communication of 'previously invisible relations typical of "food from nowhere", risk politics and food scares, retailer power and explicit consumer preferences, and a perceived nutrition crisis associated with convenience foods' (Campbell, forthcoming). Accordingly, Campbell claims:

It is within this cluster of cultural dynamics that a cluster of food relations that can be termed Food from Somewhere has emerged. Just as the Food from Nowhere regime is concentrated in the cheaper end of the food market and rooted within a set of cultural framings that emphasise cheapness, convenience, attractive transformation through processing and rendering invisible the origins of food products, affluent consumers in Western societies are attaching cultural status to foods which they perceive to be opposite; that are attractively socially and ecologically-embedded.

And Campbell (forthcoming) concludes:

while Foods from Somewhere do provide one site of opportunity for changing some key food relations and ecologies, the social legitimacy of this new form of food relations does rely on the ongoing existence of the opposite, more regressive, pole of world food relations. Resolving this tension is central to any attempt to continue opening up spaces for future, more sustainable, global-scale food relations.

Campbell's legacy, building on the environmental thread spun originally by Friedmann, is not only to re-ground food regime analysis explicitly in political ecology, but also to underline the current tension between abstraction and situation of food cultures. This focus resonates in the continuing tension between the food sovereignty movement claims that smallholders 'feed the world and cool the planet', and the development industry's attachment to a 'food security' rhetoric for 'feeding the world' by incorporating Southern farmers into a refashioned agriculture organised by transnational 'value chains' – as detailed in the World Bank's *World Development Report* (2008). In addition, by emphasising the notion of 'ecological feedback', Campbell reinforces Weis' substantive contribution to the ecological contradictions of the 'global food economy' with its food miles, mounting toxicity and the 'ecological hoofprint'. Weiss (2007) emphasises the environmental impact of 'meatification', stressing that 'moving away from meat-centred consumption

patterns is an elemental part of reducing humanity's collective space in the biosphere and leaving room for other species into this century, with well-balanced plant-centred diets also holding the additional promise of an array of public health benefits' (2007, 171). This is an argument not just for a political ecological perspective on food regimes, but also for an ethical perspective, which I shall address in the final section.

Food regimes, the metabolic rift, and an epistemic rift

Friedmann's and Campbell's respective references to the metabolic rift is foundational. The food regime is ultimately anchored in the 'metabolic rift', Marx's term for the separation of social production from its natural biological base.³⁴ The 'metabolic rift' expresses the subordination of agriculture to capitalist production relations, that is, the progressive transformation of agricultural inputs (organic resources to inorganic commodities), reducing nutrient recycling in and through the soil and water, and introducing new agronomic methods dependent upon chemicals and bioengineered seeds and genetic materials produced under industrial conditions. As Moore (2000) notes, the metabolic rift underlies the historic spatial separation between countryside and city, as agriculture industrialises. As a fundamental consequence of this rift, fossil fuel dependence exerts a determinate constraint on the viability of industrial agriculture in the future.

Moore's treatment of the metabolic rift articulates the social division of labour and its world-scale, and imperial implications (otherwise known as the 'ecological footprint').³⁵ The mediation of the urban/rural spatial relation by commodity circuits, rather than cycles of waste and regeneration of natural processes, deepens the metabolic rift. Historically, the world was reordered along these lines initially via the colonial division of labour, anchored in monocultures producing tropical products for metropolitan industrial and personal consumption. With the development of chemical agriculture and biotechnology, the growing abstraction of agriculture as an 'input-output process that has a beginning and an end' (Duncan 1996, 123) means that rather than a complex embedded in, and regenerating, local biological cycles, agriculture can in principle be relocated to specific locales anywhere on the planet as the 'intrinsic qualities of the land matter less' (1996, 122). In effect, agro-industrialisation increasingly replicates the spatial mobility of manufacturing systems, including the sub-division of constituent processes into global commodity chains (such as the animal protein complex). And, to the extent that it is premised on the incorporation (contract farming for agribusiness) and/or dispossession of smallholders, it has a labour reserve at its disposal.

'Petro-farming' (Walker 2004) deepens the metabolic rift, by extending inputs of inorganic fertiliser, pesticides, herbicides along with mechanisation, increasing farm demand for carbon-emitting fuels and inputs, in addition to releasing soil carbon to the atmosphere along with even more damaging nitrous oxide from fertiliser use, and

³⁴It captures 'the material estrangement of human beings within capitalist society from the natural conditions which formed the basis for their existence' (Foster 2000, 163).

³⁵Thus Marx wrote in *Capital*, volume 1 (1967, 860): 'England has indirectly exported the soil of Ireland, without even allowing its cultivators the means for replacing the constituents of the exhausted soil.'

from livestock waste in factory farming. The agro-industrial model, aided by states enclosing common and peasant lands for agro-industrial estates, has deepened its global presence via a second, private phase of the Green Revolution, targeting feed crops, livestock, fruits and vegetables, and now agro-fuels. Represented as the vehicle to feed the world, and stimulating agro-export revenues in indebted states, agribusiness displaces those agro-ecological systems, including slow food systems, which could reverse the metabolic rift, as they use 6–10 times less energy than industrial agriculture, restore soils, and reduce emissions up to 15 percent, not to mention sustaining small-scale producer livelihoods.³⁶

The metabolic rift underlies both the material and epistemic relations of capitalism (McMichael forthcoming). In separating agriculture from its natural foundations, the metabolic rift informs the episteme through which we analyse the value relations of commodity production. The abstraction of agriculture, and therefore the foundations of social production, means that value relations organise agriculture, and it comes to be understood in these terms. This has become readily apparent today, in context of the combined crises of food, energy and climate change. The so-called ‘biofuels rush’ renders agriculture indistinguishable from energy production in a context where peak oil is making its presence felt in world prices. The inflation of food prices in turn expresses an integrating fuel-food complex, as alternative energy sources displace food, with fuel, crops. Here, palm oil ‘now used widely in food products ranging from instant noodles to biscuits and ice cream, has become so integrated into energy markets that its price moves in tandem with crude oil price’ (Greenfield 2007, 4). Further, with rising oil prices, ‘food is worth more as petrol than it is on the table, even if the subsidies are removed’ (Goodall 2008). The fungibility of investment choices, in plant-based food or fuel, emphasises the extent to which value relations govern current food relations.

As suggested above, value relations enable us to situate food politics historically, and to underline how capital undermines agriculture and its ecological base and hydrological and atmospheric cycles. But a value relations perspective ultimately limits our understanding of alternatives. We are constrained to ‘see like capital’, our understanding of the processes and consequences of agro-industrialisation being governed by its application of the economic calculus to environment relations. To the extent that food regime analysis deploys the lens of value relations, it discounts the ecological calculus, whereby the social reproduction of alternative food cultures depends on restorative ecological practices beyond a market episteme. Arguably, the ecological calculus is emerging as an organising episteme of the mushrooming counter-movements – from food sovereignty through Slow Food to Fair Trade. Via Campesina, in particular, and the food sovereignty movement in general, recognise the epistemic shift that is necessary to reverse the metabolic rift, by revaluing agro-ecology and a ‘carbon-rich’ future, where a human-scale agriculture performs the life-task of feeding those marginalised by corporate foods, sequestering atmospheric carbon and rebuilding depleted soils across this planet. This epistemic shift represents an ethical intervention by which the economic calculus of capitalist food regimes is replaced by an ecological calculus.³⁷ The latter is gaining legitimacy, as the

³⁶Pretty *et al.* (2006), Apfelbaum and Kimble (2007).

³⁷Martinez-Alier (2002, 147) characterises Via Campesina’s ecological vision in these terms.

global food system's contradictions, limits and injustices are revealed more clearly in the compounding of the energy, food and climate crises. The food sovereignty movement, in politicising the current food order (McMichael 2008a), draws attention to the severe shortcomings of commodifying food, and its ecological foundations, across the world, and in so doing offers a new ethic that would inform a decentered and democratic 'food regime'.³⁸

This ethic seeks to recover the centrality of agriculture³⁹ as a foundation, rather than the receding baseline role it has played in development narratives. It means envisioning ways in which social life can be reconstituted around alternative principles that respect the ecological relations through which social reproduction occurs. Community-supported agricultures, Slow Food praesidia (Fonte 2006), vegetarianism, and chapters of the transnational food sovereignty movement express this ecological sensibility.

Conclusion

The food regime concept is a key to unlock not only structured moments and transitions in the history of capitalist food relations, but also the history of capitalism itself. That is the food regime is an important optic on the multiple determinations embodied in the food commodity, as a *genus* fundamental to capitalist history. As such, the food regime concept allows us to refocus from the commodity as object to the commodity as relation, with definite geo-political, social, ecological, and nutritional relations at significant historical moments. In this essay I have traced the evolution of food regime analysis from a rather stylised periodisation of moments of hegemony in the global order to a refocusing on moments of transition, and the various social forces involved in constructing and reconstructing food regimes. Using a genealogical approach, we have encountered versions of food regime analysis focusing on whether and to what extent there is a current food regime associated with the neo-liberal moment, and its institutional supports, sometimes through case studies of commodities (Pritchard 1996, 1998), or technologies (Pechlaner and Otero 2008). Since the authority of the concept is a public good, what we may make of the debates about the salience or existence of a 'third' food regime is that they express different vantage points in understanding the structuring relations in, and multiple dimensions of, the agrofood system.

A principal distinction I have made is between identifying food regime moments (stable periods of accumulation and associated transitional periods), and using food regime analysis to identify significant relationships and contradictions in capitalist processes across time and space. Further, rather than view the food regime as a bounded moment or period, it can alternatively (or complementarily) express uneven and/or particular structuring processes in food relationships associated with the world-history of capitalism. The value relations method lends itself to this kind of '*longue durée*', or generic, property of the food regime. We might, then, either

³⁸This organising principle is central to the current debate over the future of food and ecology, as suggested by the different, but complementary, accounts by Friedmann (2005) and McMichael (2005).

³⁹Duncan (1996, 2007) makes the extended, historical case for this notion.

imagine the food regime as a constant presence in the capitalist historical landscape, and/or examine mutations as continual efforts to regulate and resolve what are ultimately quite contradictory and volatile relationships, given food's central role in social reproduction, and therefore in reproducing changing forms and relations of power.

Ultimately, as a historical construct, the food regime has ethical potential: regarding how we live on the earth, and how we live together.⁴⁰ In this sense it stands as a point of departure in specifying the political and ecological relations of food in the history of capital. But identifying key food regime contradictions raises epistemological questions concerning the value calculus, challenging the path-dependent account encouraged by analysis through the lens of capital. Whether 'ecology at a distance', food sovereignty, or agro-ecology, these perspectives insist on addressing what are considered 'externalities' in the economic calculus, embracing a holistic understanding of agriculture that dispenses with the society/nature binary, and politicises food system cultures. Finally, historicising food regime politics has the potential to transcend the increasingly discredited episteme of capital accumulation and advocate agricultural reorganisation according to socially and ecologically sustainable practices. This is the centrality of the food regime in the twenty-first century.

References

- Altieri, M. 2008. Small farms as a planetary ecological asset: five key reasons why we should support the revitalisation of small farms in the Global South. *Food First*. Available from: <http://www.foodfirst.org/en/node/2115> [Accessed 26 March 2009].
- Apfelbaum, S.I. and J. Kimble. 2007. A dirty, more natural way to fight climate change. *Ithaca Journal*, 6 December, p. 9.
- Araghi, F. 1995. Global de-peasantisation, 1945–1990. *The Sociological Quarterly*, 36(2), 337–68.
- Araghi, F. 2003. Food regimes and the production of value: some methodological issues. *The Journal of Peasant Studies*, 30(2), 41–70.
- Araghi, F. 2008. The invisible hand and the visible foot: peasants, dispossession and globalisation. In: A.H. Akram-Lodhi and C. Kay, eds. *Peasants and globalisation. Political economy, rural transformation and the agrarian question*. London & New York: Routledge, pp. 111–47.
- Barndt, D. 2008. *Tangled routes. Women, work and globalisation on the tomato trail*. Aurora, ON: Garamond Press.
- Bernstein, H. 2008. Agrarian questions from transition to globalisation. In: A.H. Akram-Lodhi and C. Kay, eds. *Peasants and globalisation. Political economy, rural transformation and the agrarian question*. London: Routledge, pp. 214–38.
- Bonnano, A., et al. 1994. *From Columbus to Conagra: the globalisation of agriculture and food*. Lawrence, KS: University of Kansas Press.
- Borras, S.M. Jr., M. Edelman and C. Kay, eds. 2008. *Transnational agrarian movements confronting globalisation*. Chichester: Wiley-Blackwell.
- Bové, J. and F. Dufour. 2001. *The world is not for sale*. London: Verso.
- Burbach, R. and P. Flynn. 1980. *Agribusiness in the Americas*. New York, NY: Monthly Review Press.
- Burch, D. and G. Lawrence. 2005. Supermarket own brands, supply chains and the transformation of the agrofood system. *International Journal of the Sociology of Agriculture and Food*, 13(1), 1–18.

⁴⁰Such ethical perspectives constitute an important thread through Friedmann's work (e.g., 1993, 2003), and feature in Duncan (1996, 2007) and in the final, visionary chapter of Weis (2007).

- Burch, D. and G. Lawrence, eds. 2007. *Supermarkets and agri-food supply chains. Transformations in the production and consumption of foods*. Cheltenham: Edward Elgar.
- Burch, D. and G. Lawrence. 2009. Towards a third food regime: behind the transformation. *Agriculture and Human Values*, 26(4).
- Burros, M. 2008. Supermarket chains narrow their sights. *New York Times*, 6 August, F1.
- Buttel, F.H. 2001. Reflections on late-twentieth century agrarian political economy. *Sociologia Ruralis*, 41(2), 11–36.
- Campbell, H. Forthcoming. The challenge of corporate environmentalism: social legitimacy, ecological feedbacks and the ‘food from somewhere’ regime. *Agriculture and Human Values*.
- Campbell, H. and B. Coombes. 1999. ‘Green protectionism’ and organic food exporting from New Zealand: crisis experiments in the breakdown of Fordist trade and agricultural policies. *Rural Sociology*, 64(2), 302–19.
- Carson, R. 1962 *Silent spring*. Boston, MA: Houghton Mifflin.
- Cutler, A.C. 2001. Critical reflections on the Westphalian assumptions of international law and organisation: a crisis of legitimacy. *Review of International Studies*, 27(2), 133–50.
- Davis, M. 2001. *Late Victorian holocausts. El Nino famines and the making of the Third World*. London: Verso.
- Davis, M. 2006. *Planet of slums*. London: Verso.
- Desmarais, A.-A. 2007. *La Vía Campesina. Globalisation and the power of peasants*. Halifax: Fernwood Publishing.
- DeWalt, B. 1985. Mexico’s second green revolution: food for feed. *Mexican Studies/Estudios Mexicanos*, 1(1), 29–60.
- Dixon, J. 2002. *The changing chicken: chooks, cooks and culinary culture*. Sydney: University of New South Wales Press.
- Dixon, J. (2009). From the imperial to the empty calorie: how nutrition relations underpin food regime transitions. *Agriculture and Human Values*, 26(4).
- Dolan, C. 2004. On farm and packhouse: employment at the bottom of a global value chain. *Rural Sociology*, 69(1), 99–126.
- Dolan, C. and J. Humphrey. 2000. Governance and trade in fresh vegetables: the impact of UK supermarkets on the African horticulture industry. *Journal of Development Studies*, 37(2), 147–76.
- Duncan, C. 1996. *The centrality of agriculture. Between humankind and the rest of nature*. Montreal: McGill-Queen’s University Press.
- Duncan, C. 2007. The practical equivalent of war? Or, using rapid massive climate change to ease the great transition towards a new sustainable anthropocentrism. Available from: <http://globetrotter.berkeley.edu/GreenGovernance/Rapid%20Climate%20Change.pdf> [Accessed 26 March 2009].
- Fold, N. 2002. Lead firms and competition in ‘bi-polar’ commodity chains: grinders and branders in the global cocoa-chocolate industry. *Journal of Agrarian Change*, 2(2), 228–47.
- Fold, N. and B. Pritchard. 2005. *Cross-continental food chains*. London: Routledge.
- Fonte, M. 2006. Slow foods presidia: what do small producers do with big retailers?. In: T. Marsden and J. Murdoch, eds. *Between the local and the global: confronting complexity in the contemporary agri-food sector, research in rural sociology and development*. Oxford: Elsevier.
- Foster, J.B. 2000. *Marx’s ecology. Materialism and nature*. New York, NY: Monthly Review Press.
- Friedland, W. 1994. The global fresh fruit and vegetable system: an industrial organisation analysis. In: P. McMichael, ed. *The global restructuring of agro-food systems*. Ithaca, NY: Cornell University Press, pp. 173–89.
- Friedmann, H. 1978. World market, state and family farm: social bases of household production in an era of wage-labour. *Comparative Studies in Society and History*, 20(4), 545–86.
- Friedmann, H. 1982. The political economy of food: the rise and fall of the postwar international food order. *American Journal of Sociology*, 88S, 248–86.
- Friedmann, H. 1987. International regimes of food and agriculture since 1870. In: T. Shanin, ed. *Peasants and peasant societies*. Oxford: Basil Blackwell, pp. 258–76.

- Friedmann, H. 1991. Changes in the international division of labour: agri-food complexes and export agriculture. In: W. Friedland, L. Busch, F.H. Buttel and A.P. Rudy, eds. *Towards and new political economy of agriculture*. Boulder, CO: Westview Press.
- Friedmann, H. 1993a. The political economy of food: a global crisis. *New Left Review*, 197, 29–57.
- Friedmann, H. 1993b. After Midas' feast. In: P. Allen, ed. *Food for the future: conditions and contradictions of sustainability*. New York, NY: John Wiley & Sons.
- Friedmann, H. 1994. Distance and durability: shaky foundations of the world food economy. In: P. McMichael, ed. *The global restructuring of agro-food systems*. Ithaca, NY: Cornell University Press.
- Friedmann, H. 2000. What on earth is the modern world-system? Food-getting and territory in the modern era and beyond. *Journal of World-System Research*, VI(2), 480–515.
- Friedmann, H. 2003. Eating in the gardens of Gaia: envisioning polycultural communities. In: J. Adams, ed. *Fighting for the farm: rural America transformed*. Philadelphia, PA: University of Pennsylvania Press.
- Friedmann, H. 2005. From colonialism to green capitalism: social movements and the emergence of food regimes. In: F.H. Buttel and P. McMichael, eds. *New directions in the sociology of global development. Research in rural sociology and development*, Vol. 11. Oxford: Elsevier, pp. 229–67.
- Friedmann, H. and P. McMichael. 1989. Agriculture and the state system: the rise and fall of national agricultures, 1870 to the present. *Sociologia Ruralis*, 29(2), 93–117.
- Friedmann, H. and A. McNair. 2008. Whose rules rule? Contested projects to certify 'local production for distant consumers'. *Journal of Agrarian Change*, 8(2–3), 408–34.
- Frith, M. 2006. Ethical foods boom tops £2bn a year and keeps growing. *The Independent*, 13 October, p. 21.
- George, S. 1977. *How the other half dies. The real reasons for world hunger*. Montclair, NJ: Allenheld, Osmun & Co.
- Goodall, C. 2008. Burning food: why oil is the real villain in the food crisis. *The Guardian*, 30 May.
- Goodman, D. and M. Watts. 1994. Reconfiguring the rural or fording the divide? Capitalist restructuring and the global agro-food system. *The Journal of Peasant Studies*, 22(1), 1–49.
- Goodman, D. and M. Watts, eds. 1997. *Globalising food. Agrarian questions and global restructuring*. London: Routledge.
- Goodman, D., B. Sorj and J. Wilkinson. 1987. *From farming to biotechnology. A theory of agro-industrial development*. Oxford: Basil Blackwell.
- Gore, A. 2006. *An inconvenient truth*. New York, NY: Rodale.
- Goss, J. and D. Burch. 2001. From agricultural modernisation to agri-food globalisation: the waning of national development in Thailand. *Third World Quarterly*, 22(6), 969–86.
- Greenfield, H. 2007. Rising commodity prices & food production: the impact on food & beverage workers. International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations (IUF), December.
- Halperin, S. 2005. Trans-local and trans-regional socio-economic structures in global development: a 'horizontal' perspective. In: F.H. Buttel and P. McMichael, eds. *New directions in the sociology of global development*. Oxford: Elsevier Press, pp. 19–56.
- Hollis, W.L. and F.L. Tullist, eds. 1986. *Food, the state, and international political economy*. Omaha, NB: University of Nebraska Press.
- International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) 2008. Executive summary of the synthesis report. Available from: www.agassessment.org/docs/SR_Exec_Sum_280508_English.pdf [Accessed 26 March 2009].
- Jaffee, D. 2007. *Brewing justice: fair trade coffee, sustainability and survival*. Berkeley, CA: University of California Press.
- Kloppenborg, J.R. Jr. 1988. *First the seed. The political economy of plant biotechnology, 1492–2000*. Cambridge: Cambridge University Press.
- Kneen, B. 2002. *Invisible giant. Cargill and its transnational strategies*. London: Pluto Press.

- Lang, T. and M. Heasman. 2004. *Food wars. The global battle for mouths, minds and markets*. London: Earthscan.
- Lappé, F.M. 1971. *Diet for a small planet*. New York, NY: Ballentine.
- Lappé, F.M., J. Collins and P. Rosset. 1998. *World hunger: twelve myths*. New York, NY: Grove.
- Le Heron, R. 1993. *Globalised agriculture*. Oxford: Pergamon.
- Llambi, L. 1994. Comparative advantages and disadvantages in Latin American nontraditional fruit and vegetable exports. In: P. McMichael, ed. *The global restructuring of agro-food systems*. Ithaca, NY: Cornell University Press, pp. 190–213.
- Madeley, J. 2000. *Hungry for trade*. London: Zed Books.
- Martinez-Alier, J. 2002. *The environmentalism of the poor. A study of ecological conflicts and valuation*. Cheltenham: Edward Elgar.
- Marx, K. 1967. *Capital*, Volume 1. Moscow: Progress Publishers.
- McMichael, A.J., J.W. Powles, C.D. Butler and R. Uauy. 2007. Food, livestock production, energy, climate change, and health. *The Lancet*, 13 September.
- McMichael, P. 1984. *Settlers and the agrarian question. Foundations of capitalism in colonial Australia*. Cambridge: Cambridge University Press.
- McMichael, P. 1992. Tensions between national and international control of the world food order: contours of a new food regime. *Sociological Perspectives*, 35(2), 343–65.
- McMichael, P., ed. 1994. *The global restructuring of agro-food systems*. Ithaca, NY: Cornell University Press.
- McMichael, P., ed. 1995. *Food and agrarian orders in the world economy*. Westport, CT: Praeger.
- McMichael, P. 1996. *Development and social change. A global perspective*. Thousand Oaks, CA: Pine Forge Press.
- McMichael, P. 2000. A global interpretation of the rise of the East Asian food import complex. *World Development*, 28(3), 409–24.
- McMichael, P. 2002. La restructuration globale des systèmes agro-alimentaires. *Mondes en Développement*, 30(117), 45–54.
- McMichael, P. 2005. Global development and the corporate food regime. In: F.H. Buttel and P. McMichael, eds. *New directions in the sociology of global development*. Oxford: Elsevier Press.
- McMichael, P. 2008a. Peasants make their own history, but not just as they please . . . *Journal of Agrarian Change*, 8(2–3), 205–28.
- McMichael, P. 2008b. Food sovereignty, social reproduction and the agrarian question. In: A.H. Akram-Lodhi and C. Kay, eds. *Peasants and globalisation. Political economy, rural transformation and the agrarian question*. London: Routledge, pp. 288–311.
- McMichael, P. 2009a. Contemporary contradictions of the global development project: geopolitics, global ecology and the ‘development climate’. *Third World Quarterly*, 30(1), 247–62.
- McMichael, P. 2009b. Banking on agriculture: a review of the *World development report 2008*. *Journal of Agrarian Change*, 9(2), 205–28.
- McMichael, P. Forthcoming. In the short run are we all dead? A perspective on the development climate. *Review*.
- McMichael, P. and H. Friedmann. 2007. Situating the ‘retailing revolution’. In: D. Burch and G. Lawrence, eds. *Supermarkets and agrofood supply chains. Transformations in the production and consumption of foods*. Cheltenham: Edward Elgar.
- Mintz, S. 1986. *Sweetness and power. The place of sugar in modern history*. New York, NY: Vintage.
- Moore, J.W. 2000. Environmental crises and the metabolic rift in world-historical perspective. *Organisation & Environment*, 13(2), 123–57.
- Moran, W., et al. 1996. Family farmers, real regulation, and the experience of food regimes. *Journal of Rural Studies*, 12(3), 245–58.
- Morgan, D. 1980. *Merchants of grain*. New York, NY: Penguin.
- Panitch, L. and S. Gindin. 2004. Global capitalism and American empire. In: L. Panitch and C. Leys, eds. *The new imperial challenge: socialist register 2004*. London: Merlin Press.

- Patel, R. 2006. International agrarian restructuring and the practical ethics of peasant movement solidarity. *Journal of Asian and African Studies*, 41(1–2), 71–93.
- Patel, R. 2007. *Stuffed and starved. Markets, power and the hidden battle over the world's food system*. London: Portobello Books.
- Pechlaner, G. and G. Otero. 2008. The third food regime: neoliberal globalism and agricultural biotechnology in North America. *Sociologia Ruralis*, 48(4), 1–21.
- Peine, E. 2009. *The private state of agribusiness*. PhD Dissertation, Development Sociology, Cornell University.
- Perkins, J.H. 1997. *Geopolitics and the green revolution: wheat, genes and the Cold War*. New York, NY: Cambridge University Press.
- Pistorius, R. and J. van Wijk. 1999. *The exploitation of plant genetic information. Political strategies in crop development*. Oxon: CABI Publishing [place in Oxon].
- Pretty, J., et al. 2006. Resource conserving agriculture increases yields in developing countries. *Environmental Science & Technology*, 40(4), 1114–9.
- Pritchard, B. 1996. Shifts in food regimes, regulation and producer cooperatives: insights from the Australian and US dairy industries. *Environment and Planning A*, 28(5), 857–75.
- Pritchard, B. 1998. The emergent contours of the third food regime: evidence from Australian dairy and wheat sectors. *Economic Geography*, 74(1), 64–74.
- Pritchard, B. 2007. Food regimes. In: R. Kitchin and N. Thrift, eds. *The international encyclopedia of human geography*. Amsterdam: Elsevier.
- Pritchard, B. Forthcoming. The long hangover from the second food regime: a world-historical interpretation of the collapse of the WTO Doha Round. *Agriculture and Human Values*.
- Pritchard, B. and D. Burch. 2003. *Agro-food globalisation in perspective. International restructuring in the processing tomato industry*. Aldershot: Ashgate.
- Raynolds, L.T. 1994. The restructuring of Third World agro-exports: changing production relations in the Dominican Republic. In: P. McMichael, ed. *The global restructuring of agro-food systems*. Ithaca, NY: Cornell University Press, pp. 214–37.
- Raynolds, L.T., et al. 1993. The 'new' internationalisation of agriculture: a reformulation. *World Development*, 21(7), 1101–21.
- Raynolds, L.T., D. Murray and J. Wilkinson, eds. 2007. *Fair trade: the challenges of transforming globalisation*. Abingdon: Routledge.
- Reardon, T., et al. 2003. The rise of supermarkets in Africa, Asia and Latin America. *American Journal of Agricultural Economics*, 85(5), 1140–6.
- Rifkin, J. 1992. *Beyond beef. The rise and fall of the cattle culture*. New York, NY: Penguin.
- Roberts, J. 2008. *The end of food*. New York, NY: Houghton Mifflin.
- Rostow, W.W. 1960. *The stages of economic growth*. Cambridge: Cambridge University Press.
- Sachs, J. 2008. *Commonwealth*. New York, NY: Penguin.
- Thomson, R. 1987. *Green gold: bananas and dependency in the eastern Caribbean*. London: Latin American Bureau.
- Tubiana, L. 1989. World trade in agricultural products: from global regulation to market fragmentation. In: D. Goodman and M. Redclift, eds. *The international farm crisis*. New York, NY: St. Martin's Press.
- Vía Campesina 2001. Our world is not for sale. Priority to people's food sovereignty. Bulletin, 1 November. Available from: http://www.viacampesina.org/welcome_english.php3 [Accessed 15 June 2005].
- Vía Campesina 2004. The domination of capital over agriculture. Bulletin 4, 18 June. Available from: http://www.viacampesina.org/welcome_english.php3 [Accessed 15 June 2005].
- Walker, R. 2004. *The conquest of bread. A hundred and fifty years of agribusiness in California*. New York, NY: New Press.
- Weiss, T. 2007. *The global food economy. The battle for the future of farming*. London: Zed Books.
- Winders, B. 2009. *The politics of food supply. US agricultural policy in the world economy*. New Haven, CT: Yale University Press.
- World Bank 2008. *World development report 2008: agriculture for development*. Washington, DC: The World Bank.

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