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Reworking the metabolic rift: La Vía Campesina, agrarian citizenship, and food sovereignty

Hannah Wittman

Amidst increasing concerns about climate change, food shortages, and widespread environmental degradation, a demand is emerging for ways to resolve longstanding social and ecological contradictions present in contemporary capitalist models of production and social organisation. This paper first discusses how agriculture, as the most intensive historical nexus between society and nature, has played a pivotal role in social and ecological change. I explore how agriculture has been integrally associated with successive metabolic ruptures between society and nature, and then argue that these ruptures have not only led to widespread rural dislocation and environmental degradation, but have also disrupted the practice of agrarian citizenship through a series of interlinked and evolving philosophical, ideological, and material conditions. The first section of the paper thus examines the de-linking of agriculture, citizenship, and nature as a result of ongoing cycles of a metabolic rift, as a ‘crucial law of motion’ and central contradiction of changing socio-ecological relations in the countryside. I then argue that new forms of agrarian resistance, exemplified by the contemporary international peasant movement La Vía Campesina’s call for food sovereignty, create a potential to reframe and reconstitute an agrarian citizenship that reworks the metabolic rift between society and nature. A food sovereignty model founded on practices of agrarian citizenship and ecologically sustainable local food production is then analysed for its potential to challenge the dominant model of large-scale, capitalist, and export-based agriculture.

Keywords: food sovereignty; citizenship; agrarian transformation; nature; metabolic rift

We cultivate the earth and the earth cultivates us.
– MST *mística* (2003), personal observation

It has been widely argued among environmental historians that the first acts of agricultural domestication more than 10,000 years ago triggered an irreversible process of the human domination of nature (cf. Foster 2000, Ponting 2007). While pre-capitalist agricultural systems certainly involved widespread landscape transformation, modifications were primarily of a local and regional character, depending on a continual recycling of nutrients between small-scale human settlements embedded in an abundant nature (Vasey 1992). As such, many regions considered as wild or

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untouched nature in the modern period have only recently been exposed as the outcome of longstanding human interaction. For example, Denevan's (1992) research into the 'pristine myth' demonstrates that humanised and agricultural landscapes were ubiquitous in the pre-colonial Americas, including not only earthworks and transportation corridors but also the creation of grasslands and modified forests used for subsistence food provision. Likewise, archaeological discoveries in remote regions of the Brazilian Amazon, another widespread emblem of 'pristine nature', have shown that indigenous settlements dating back to 2500 BCE were embedded in a matrix of agricultural land use before the arrival of European diseases and colonists decimated those populations in the mid-sixteenth century (Heckenberger *et al.* 2008, Mann 2008).

To analyse the role of agriculture as an integral nexus between society and nature over time, and how it is involved in producing landscapes that are at once social, cultural, and ecological (Cronon 1996), it is useful to return to Marx's concept of the socio-ecological metabolism, or the 'unity of living and active humanity with the natural, inorganic conditions of their metabolic exchange with nature' (Marx 1973 [1939], 489) as a crucial law of motion in agro-ecological transformation (Foster 1999, 2000, Moore 2000, 2003a, 2003b). Marx explained the concept of a socio-ecological exchange or metabolism as a dynamic and interdependent process linking society to nature through labour: members of society appropriate the materials of nature through labour, in the process transforming the environment and simultaneously their own (human) nature. The socio-ecological metabolism in agriculture is maintained over time and space through the recycling of nutrients. Formerly small-scale, local agricultural initiatives took nutrients from the soil in the form of food, fodder, and fibre, later replenishing soil fertility with wastes to ensure continued productivity.

This theoretically sustainable, metabolic relationship between society and nature prior to the advent of capitalism was broken by the creation of labour markets and the commodification of nature, and of land in particular. The widening separation of rural producers from urban consumers disrupted traditional nutrient cycling, causing extensive soil depletion and an increasing dependence on imported fertilizers. It also fostered, according to Marx, 'antagonistic relations between town and country', as well as between core and periphery (Moore 2000, 125), that resulted from growing national and global trade in agricultural commodities. In other words, the transformation of rural social and ecological relations in agriculture underpinned global economic changes occurring throughout the eighteenth and nineteenth centuries.

This paper examines the relationship between ongoing cycles of a metabolic rift as they relate to the transformation and re-emergence of 'agrarian citizenship' by examining key actors, processes, and 'ruptures' in contemporary agro-ecological change. Agrarian citizenship is a concept that encompasses the political and material rights and practices of rural dwellers (Wittman 2009b), and is a form of citizenship based not solely on issues of rural political representation, but also on a relationship with the socio-ecological metabolism between society and nature. This notion of citizenship recognises nature's role in the continuing political, economic, and cultural evolution of agrarian society (Mann and Dickinson 1978, Mann 1990). The link between agrarian citizenship and the socio-ecological metabolism follows what French philosopher Michel Serres has proposed as a 'natural' contract between humans and nature, involving the reciprocal roles, rights, responsibilities, and

relationships between nature as sustenance and humanity as steward of its own reproductive status. Serres (1995, 11) argues for

drawing up and appending to our exclusively social contract a natural contract of symbiosis and reciprocity; a contract in which our relationship to things would no longer involve mastery and possession, but an admiring stewardship, reciprocity, contemplation, and respect . . .

A form of agrarian citizenship based on a natural contract would not just append nature as a virtual signatory to the existing social contract, but would recognise nature's role in the negotiation of agrarian change. As Serres suggests, 'those who share power today have forgotten nature, which could be said to be taking its revenge but which, more to the point, is reminding us of its existence' (Serres 1995, 29). It would also suggest an empirical, rather than moral, mechanism by which to understand the ways that society and nature continue to shape and reshape one another, by taking into account ecological phenomena (i.e. soil fertility, climate change) as a driver of social change. In this sense, returning to a historical consideration of the metabolic rift helps us to understand both the political-economic and ecological formation of agrarian citizenship. Conversely, understanding how agrarian citizenship is evolving also helps us to understand the social and ecological implications of peasant mobilisations for agrarian transformation, food sovereignty, and the continual re-working of the metabolic rift.

Rethinking citizenship from the standpoint of the nature-society relation requires us to challenge both contemporary and historical conceptualisations of citizenship. Agrarian citizenship, recognising and incorporating the socio-ecological metabolism as the foundation of its constitution, falls between a state-centered citizenship approach (as exemplified by Marshallian notions of citizenship based on political enfranchisement and social welfare [cf. Marshall and Bottomore 1992]) and a communitarian citizenship based on systems of mutual human obligation (cf. Etzioni 1996). In addition, agrarian citizenship includes but goes beyond treatments of rural citizenships that primarily deal with issues of political representation vis-à-vis the state as governed by property rights or other economic criteria (Fox 1990, 1994), a theme that dates back to the French Revolution.¹ The post-liberal notion (Faulks 2000) of agrarian citizenship as posed here, therefore, differs both from traditional property or class based notions of citizenship (Brass 2007) and the contemporary citizen-consumer model of the corporate food regime (Johnston 2008) in its embodiment of the metabolism in that social and ecological factors enacted at both local and global levels are deeply embedded in the conceptualisation and practice of citizenship rights and obligations. It also differs from a burgeoning literature on environmental citizenship in its attention to the ways in which nature, and land, are constitutive of the citizenship relation, rather than simply an object of it.² Agrarian citizens, in theory, would expect state protection for local rights to

¹While the French Revolution brought into wide usage a notion of citizenship that stressed both the universal and egalitarian potential of the citizenship concept and the collective aspects of a citizenship in which community was united by a 'general will', enfranchisement was still limited by issues of class, gender, and race (Faulks 2000, Heater 2004).

²There is growing literature on 'environmental' or 'ecological' citizenship as a part of the global agenda for achieving sustainability. In this agenda, the diverse perspectives of social ecology, political science, environmental ethics, and philosophy provide a forum to debate how members of human societies can act – individually and collectively – in ways that

produce and protect the environment, but would also depend on local and global social networks and traditional ecological knowledge of agrarian conditions to enact those rights. Thus agrarian citizenship can be viewed as a model of rural action that ‘protects against both state abuses and the greed of the market’ by encompassing the role of civil society and of democratic communication (Janoski 1998, 7), while also acknowledging ecological limits.

Agriculture and the metabolic rift

The ongoing transformation of agriculture from a metabolic activity linking society and nature to a commodity-based driver of capitalist expansion has been a primary driver of the metabolic ‘rift’ (Foster 1999, 2000, Moore 2000). A relatively closed-loop system (food production and reincorporation of wastes into the traditional agrarian cycle) is disrupted as producers and consumers are increasingly separated not just in the context of rural/urban local or national economies but also further afield through agricultural trade and regional specialisation. At the same time, technological advances in biology and agronomy allowed not only a ‘domination’ or ‘mastery’ of the ecological foundations of agriculture (Leiss 1972, Merchant 1989) but also its discipline through simplification, specialisation, and rationalisation (Scott 1998, Carolan 2005).

This process of distancing underlies and fosters the social and ecological effects of agricultural restructuring, including the erosion of agrarian citizenship as rural producers are separated from both means of production and rural social and political networks. Transformation of the conditions and relations of production, including the continuing processes of enclosure and appropriation of rural labour, fostered the conversion of agriculture from a localised and diversified reproductive strategy into a highly productive, market-oriented, and eventually globalised commodity. The delocalisation of agriculture thus ‘entailed a thoroughgoing rupture with old ecological relations of production’, or a metabolic rift. As this rift has widened and deepened over time, it has contributed to both social and ecological change in not only the countryside, but it has also conditioned the ‘social structure and ecology of the cities and the emergent world system’ (Moore 2000, 125–6).

In his seminal work *The Great Transformation*, Karl Polanyi built upon Marx’s understanding of the historically interdependent relationship between society and nature, suggesting that ‘what we call land is an element of nature inextricably interwoven with man’s institutions’ (Polanyi 2001 [1944], 187). In other words, the transformation of social and property relations transforms the human relation to nature, but the material conditions of the soil, i.e. its fertility, or conversely its propensity to become degraded through overuse, also transforms this relation. In this sense, a metabolic relationship between society and nature implies that social

recognise their positioning as mutually interdependent members of an earth-based cosmopolitan community (Dobson 2003, 2006, Dobson and Bell 2006). This reconsideration of a particularly ‘ecological’ citizenship by definition involves a ‘democratic politics of nature’ (Morrison 1995, Dryzek 1996, Smith 2006, Latta 2007). These authors and others argue that the way that humans think about, measure, and thus manage the environment around them ultimately depends on the culture of political community and its underlying ideologies of nature. This can be taken one step further to argue for a more democratic and socially just political system that includes rights not only for a healthy environment for human habitation and use, but one also that accounts for nature’s own rights to exist on its own terms.

and ecological change are mutually constitutive, and that to understand agro-ecological transformation over time, it is important to consider both sides of the equation.

Polanyi was particularly concerned about the land commodification process culminating in the nineteenth century as a formative component of the metabolic rift because it solidified a historical process that increasingly lumped a wide variety of complexly associated use values (the provision of food for social reproduction and ecological services for the reproduction of socio-ecological systems) into a uni-dimensional (and fictitious) exchange value – land as a tradable commodity. With the prices of newly commodified land and food subject to market fluctuations, Polanyi anticipated the ‘annihilation’ of soil and the culture of the countryside. In other words, capitalist expansion served to separate or disembed long-term relationships between producers, social classes, communities, and the ecologies they worked, disturbing the ‘metabolic interaction between man and the earth’ (Marx 1976, 637), which resulted in unforeseen, if not entirely unintended, consequences. Water pollution, deforestation, and over time, food crises were all characteristics of transformed land and labour markets. Subsequent social and economic disruptions associated with waves of capitalist expansion and the Industrial Revolution further reorganised the landscape of production and engendered systemic cycles of agro-ecological transformation (Foster 1999, 2000, Moore 2000).

Today, covering 4.4 billion hectares, over 50 percent of the earth’s surface area, agriculture remains the dominant nexus between human society and nature (Kareiva *et al.* 2007). The widespread intensification of industrial agriculture stemming from the Green Revolution allowed the rapid expansion of simplified cultivation to meet growing demands for food and inputs for other industrial activities. For example, at the end of the nineteenth century the production of 100 bushels of corn required 35 to 40 hours of planting and harvesting labour. Today, this has been reduced to less than three hours with the use of chemical fertilizers and large tractors for ploughing, weeding, and harvesting (Constable and Somerville 2003). With the rapid increase in grain production, industries found new ways to use the now cheaply available products for further industrial innovation (Friedmann and McMichael 1989).

On the ecological side, simplification and standardisation involves such practices as reducing the number of seed varieties used for major cereals and reducing the diversity of agricultural landscapes (e.g. monocropping). The simplification of the landscape made mechanised planting and harvesting easier and allowed for the widespread application of agricultural ‘packages’ of inputs, including chemical fertilizers and pesticides. By the mid-twentieth century, the Green Revolution aimed to scale up these agricultural innovations to the developing world, seeking to improve world food availability by increasing productivity and streamlining an industrial model of production. Indeed, during the 1990s alone, the production of cereal crops increased by 17 percent, roots and tubers by 13 percent, and meat by 46 percent (McNeely and Sherr 2002). These social and technological innovations had many associated social and ecological effects beyond an increase in production via more streamlined labour and mechanical practices. The reduced genetic variability required by the simplified production systems necessary for large-scale, mechanised agriculture led to decreased resistance to pests and predators, while extensive monocropping, requiring elevated levels of external chemical inputs, has caused soil degradation, desertification, and water pollution. The overall destabilisation of ecosystem services linked to this industrial model of agriculture has been shown to

'reduce the stability of food production and the resilience of these ecosystems to disturbances' (Kareiva *et al.* 2007, 1868).

Many export-oriented agricultural development strategies and Green Revolution technologies were unable to be adapted to the social and ecological conditions of the diversity of agrarian landscapes worldwide (Byres 1981, Harriss 1992, Liodakis 1997, Das 2002, Kimbell 2002, Clay 2004), leading to increased poverty levels and failing to benefit farmers in developing countries, in particular. Initial increases in production due to the incorporation of marginal lands and expansion of inputs have slowed; a two percent annual increase in productivity between 1950 and 1990 has slowed to less than half this rate (Ponting 2007, 245). Farmers worldwide continue to lose access to land and productive capacity as a result of agricultural restructuring and increasing mobility of industrialised agriculture (Magdoff *et al.* 2000). At the same time, recent studies have shown that food losses and waste from 'field to fork' in the contemporary industrial food system, which relies on regional specialisation and long-distance transport of food, may exceed 50 percent (Lundqvist *et al.* 2008). Distribution issues contribute not only to the persistent problem of hunger, but also to climate change via the greenhouse gas contributions of transportation networks and emissions related to excess production.

Smallholder agriculture throughout the developing world struggles to compete with imports from North American and European countries that operate on a state-sponsored agricultural model and a long history of subsidies for export infrastructure and production credits (Friedmann and McMichael 1989). Subsidies on petroleum and on the development of particular agricultural technologies which have high social (e.g. displacement of rural workers) and ecological (genetic modification, loss of biodiversity) costs are not calculated in the input/output ratios of contemporary agricultural models. These national agriculture policies aim to improve aggregate production, awarding subsidies to those crops deemed most important to achieving gains in international trade. The modern industrial agricultural system also requires a regulatory framework in which farmers are identified as individual and competitive 'business managers' rather than 'earth stewards'. This bureaucratisation of the industrial farming model further excludes agriculturalists unable to access land titles, bank accounts, or futures markets. In summary, the deep social and ecological effects of the consolidation and industrialisation of agriculture have contributed not only to social displacement and ecological degradation, but, as will be argued below, have also changed the socio-ecological practices of citizenship.

Depeasantisation: the erasure of agrarian citizenship?

Standing debates on the fate of the peasantry under capitalism centre on the extent to which the peasantry will simply 'disappear' as an inevitable outcome of capitalist expansion – as a result of the consolidation of agriculture in the countryside and the displacement of rural workers to urban factories – or whether [diverse] peasantries may exhibit special characteristics that allow survival of rural smallholders in modern agricultural landscapes (Harriss 1982, Araghi 1995, Otero 1999, Brass 2007). Indeed, the percentage of farming families in North America has dropped from over 90 percent of the population at the beginning of the nineteenth century to under two percent today (Dimitri *et al.* 2005), and in Brazil, over five million peasants have been driven off the land since the late 1970s. This rural exodus has been partly

fostered by the dissemination of modern agricultural technologies and the drive for large-scale production models that has increased the distancing of humans from their food source (Pretty 1995). It has also reduced the capacity of traditional agricultural stewards to manage productive landscapes through the increasing loss of indigenous knowledge and diversity in production methods.

At issue here are not only the ways in which class differentiation as a driver of agrarian transformation in the countryside relates to both the material existence (and persistence) of the rural citizen, but also the evolving concept of agrarian citizenship. As T.H. Marshall (Marshall and Bottomore 1992, 18) remarks, ‘in the twentieth century, citizenship and the capitalist class system have been at war’, acknowledging that liberal and modern conceptions of citizenship often assume a standard of equality that does not exist in the current political economy (Brass 2007). Historical practices of citizenship-as-political enfranchisement have also considered control over land as ‘the prerequisite of active citizenship’ (Wallerstein 2003, 652). However, the diversification of global rural production systems in the contemporary period, from subsistence to large scale-commodity producers with varying access to land, inputs, and political and economic spaces, has thus made the relationship between the peasantry, class, and citizenship increasingly complex, especially as contemporary agrarian movements, in particular, newly articulate demands for land access as a *right of citizenship*, rather than as a precursor to it (Wittman 2009b). In the model of agrarian citizenship conceptualised here, the ability of a diverse array of rural actors to articulate and act on political demands constitutes an active citizenship that provides the foundation for improved access to material and ecological resources.

The point is that agriculturalists of all sorts have had a historical and contemporary role as the *prima facie* stewards managing an enormous expanse of the world landscape, and the identity and practice of these ‘agrarian citizens’ are intrinsically linked to their social, political *and* economic positions. It is precisely the class contradictions that arise in dialectical struggles for political representation and access to rural resources among agri-food regimes both within and beyond national borders, and amidst rapid ecological change, that have given rise to an evolving project of agrarian citizenship.

Food regimes and a socio-ecological countermovement

A defining characteristic of post-World War II food regimes is that ‘despite conditions of food abundance, a growing proportion of the world’s population is experiencing an increasingly unsustainable form of social reproduction as capital reorganizes relations of production and consumption of foods on a world scale’ (McMichael 2003, 169, also cf. McMichael 2009). This reorganisation of production and consumption has also reached ecological limits – as capitalism ‘ruins soil quality’ and poses an ‘ecological crisis of capitalism’ (O’Connor 1998). At the same time that ecological crises in agriculture reach new proportions – with climate change and changing weather patterns also leading to crop failures and increasing demands on technology to deal with pests and diseases – a spatial fix to capitalist agriculture is becoming increasingly problematic. While contemporary food and financial crises have triggered signals of new forms of a ‘global land grab’ (GRAIN 2008), these crises have also fostered increasing resistance by smallholder farmers, peasants, and fishers.

In an extensive exegesis of historical cycles of agro-ecological transformation, Moore (2000, 142) argues that ‘each systemic cycle of agro-ecological transformation has been shaped by intense agrarian resistance from below’. Likewise, Friedmann and McMichael (1989, 113) suggest that ‘the movement of agro-food complexes . . . presents opportunities to reconnect and redirect local production and consumption’. These arguments build on Karl Polanyi’s premise that social and ecological crisis caused by capitalism would cause a countermovement which was

more than the usual defensive behaviour of a society faced with change; it was a reaction against a dislocation which attacked the fabric of society, and which would have destroyed the very organization of production that the market had called into being. . . . the countermove consisted in checking the action of the market in respect to the factors of production, labour and land. (Polanyi 2001 [1944], 136–7)

Polanyi envisioned a countermovement that was primarily a social one, relying on the ‘support of those most immediately affected by the deleterious actions of the market – primarily, but not exclusively, the working and landed classes’ (2001 [1944], 138). These classes advocated the use of legislation and ‘other instruments of intervention’ to protect society from the deleterious effects of market capitalism. In *The Great Transformation*, Polanyi hinted at the ecological effects of market expansion, but did not give nature an explicit or independent role in the countermovement (cf. Strohane 1997, Low 2002). While addressing the rift between society and nature as one of the ‘crises’ instigating a countermovement for social protection, Polanyi’s theory ultimately fails to ‘bring nature back in’ to the society-ecology equation. Returning to the socio-ecological metabolism allows us to recognise ecological agency, or nature’s ability to ‘strike back’, in forcing socio-economic adaptation. For example, changing weather patterns and disease vectors stimulated by climate change are forcing changing practices in agriculture. In this regard, it is argued that localised, agro-ecological, and small scale initiatives may be more ‘resilient’ and thus more easily adaptable to these changes than large scale, industrial models (Berkes *et al.* 2003).

What sort of change emerges from current social and ecological crises in agriculture, however, is still an open question. Friedmann (2005) suggests that recent environmental politics are sparking a new wave of food supply chain reorganisation, one that she calls a private-capital led ‘corporate-environmental food regime’. In this ‘green’ environmental regime, capital accumulation occurs through changing production practices to create the appearance of reducing environmental impacts to ‘satisfy cultural shifts in demands for “green” commodities’ (2005, 230). However, a corporate-environmental food regime would not necessarily repair the metabolic rift. As Friedmann points out, a corporate environmental food regime may simply refer to a shift from conventional to organic commodity production, which still depends on differentiated class markets and an ongoing geographic and metabolic distancing between producer and consumer.

In searching for alternative production models that have a greater potential to challenge the dominant capitalist/commodity models of agriculture, the contemporary landscape of worldwide peasantries is not unpromising. Despite the displacing effects of the industrial transformation of agriculture, just under half of the world’s population still lives and works in rural areas, with small-farm households still comprising two-fifths of humanity (Weis 2007). In addition, agricultural movements worldwide are challenging the global role of industrial capital and agribusiness, and

have been posed as an example of a Polanyian counter-movement (McMichael 2006a, 2006b, 2008).

For example, the international peasant movement La Vía Campesina joins together 148 organisations from 69 countries throughout the Americas, Africa, Asia, and Europe to promote family farm based production, sustainable agriculture, and food sovereignty. The movement provides a common platform from which to debate and formulate alternatives to the deepening power of capital over agrarian populations (Desmarais 2002, 2007, Patel 2007). According to the movement's website,

The principal objective of the Vía Campesina is to develop solidarity and unity among small farmer organisations in order to promote gender parity and social justice in fair economic relations; the preservation of land, water, seeds and other natural resources; food sovereignty; sustainable agricultural production based on small and medium-sized producers. (La Vía Campesina 2007)

A drive to re-instil a socio-ecological basis for agrarian citizenship can be seen in the growing movement for food sovereignty, in which organisations like La Vía Campesina seek to reconnect agriculture and the environment by challenging capitalist and industrial practices in agriculture. Although actions and strategies undertaken by individual movements (and members within those movements) associated with La Vía Campesina across the globe are diverse (cf. Borras 2004, Desmarais 2007), the international leadership within La Vía Campesina responds to specialisation with diversification and to commoditisation and trade-based food security with the idea of food sovereignty as a foundation for sustainable agricultural transformation.

La Vía Campesina's objectives involve developing relations of international solidarity and mobilisation around family agriculture, rural livelihoods, and the environment. Their global discourse and scope of action are broad, aimed at overturning the neoliberal economic model and implementing an alternative model of production and exchange that protects people and the environment. The concept of food sovereignty was developed by members of La Vía Campesina and brought to global attention at the World Food Summit in Rome in 1996. In La Vía Campesina's terms, a 'people's food sovereignty' encompasses the right of local populations to define their own agricultural and food policy, organise food production and consumption to meet local needs, and secure access to land, water, and seed. It is posed as a response to historic shifts in the meaning of food security fostered by the ongoing liberalisation of agriculture, particularly in the World Trade Organisation's (WTO) Agreement on Agriculture, which denies states the right to 'full self-sufficiency as a national strategy' (McMichael 2003, 175).

As an organising principle, food sovereignty encompasses a variety of related aims or 'action areas' that include a set of common social, environmental, and agricultural principles. Explicit attention to the human/ecology nexus is present in most of La Vía Campesina's eight issue areas: agrarian reform, biodiversity and genetic resources, food sovereignty and trade, sustainable peasants' agriculture, migration and rural workers, gender, human rights, and youth. The first five of these areas directly address the challenges posed to the environment by the ongoing commodification of agriculture in the name of economic globalisation.

In what follows, I discuss several scenarios in which particular members of a contemporary peasant movement associated with La Vía Campesina engage with the

principles of food sovereignty and agrarian citizenship, as an example of the potential to enact a socio-ecological countermovement that fosters a new cycle of agro-ecological transformation. In particular, I look at three inter-related processes: attempts to reconnect town and country through the reconfiguration of local food regimes, advocacy for agro-ecology, and the campaign for seed sovereignty. In an attempt to compare discourse to practice, I then examine the actions and contradictions contained within the movement for food sovereignty regarding its potential to strengthen an agrarian citizenship and re-work the metabolic rift, in the wake of widespread social and ecological crisis. Examples are primarily drawn from fieldwork conducted with La Via Campesina in coordination with its member organisation in Brazil, the *Movimento dos Trabalhadores Rurais Sem Terra* (Landless Workers Movement, or MST), from 2003–2006.³

Re-connecting town and country through the reconfiguration of local food regimes

We work on consumer–producer relationships leading to a different agricultural model.
– Paul Nicholson, member of International Coordinating Council of LVC, 1993–2008⁴

Theories of the metabolic rift are premised upon the break in nutrient cycling that results from the transfer of ecological resources across spatial locations, as well as the social dislocations caused by regional redistributions of labour between city and country (Moore 2000). By the 1990s, national agriculture systems which had been oriented towards national food security, albeit under an increasing food dependency in peripheral countries, became subject to a shift to an increasingly concentrated and consolidated ‘corporate globalization project’ (Heffernan 2002, McMichael 2003). La Via Campesina (LVC) activists attribute rural social and ecological crises in large part to the concentration of agriculture and international trade in food, imposed as a development imperative and supported by World Trade Organisation negotiations and multi-lateral lending agencies. The breakdown of local food systems caused by the globalisation of food production and distribution has not only caused a food crisis that now reaches over one billion people, but has also caused widespread ecological damage, a loss of peasant cultural diversity, and increased poverty (Desmarais 2007, Bello 2008).

Hendrickson and Heffernan (2002) have identified a number of challenges to the globalised food system, which, in addition to class and environmental contradictions, include increasing demand by differentiated consumer markets for alternative products and for a closer relationship between consumers and producers. The food sovereignty movement has a potential to take advantage of these spaces by developing new relations between consumers and producers, by reworking the form and process of trade, rather than abolishing trade itself. For example, an early LVC statement in 1996 indicated that its members sought to ‘promote initiatives which will contribute to the development of fair trade with direct participation of producers

³The MST was one of the founding members of the La Via Campesina, with over one million members in Brazil working on issues of agrarian reform and rural social change. While the MST neither represents the movement nor is even necessarily a microcosm of it, it is a large movement that has engaged with the principles of food sovereignty over a relatively long period of time, and thus experienced the debates and challenges inherent to such a proposition.

⁴Interview 19 November 2008.

and consumers, beginning with an international anti-dumping campaign'.⁵ Many LVC members have been actively involved in promoting legislation that supports food self-sufficiency in various countries, in some cases in collaboration with broader social groups (e.g. Japan, South Korea) while in other cases challenging dominant agricultural groups heavily involved in agricultural consolidation and export-based commodity production (Desmarais 2002, FSPI 2006).⁶ Among LVC member groups, some farmers involved in large-scale or export oriented production practices lobby for agricultural policies that increase support for national agricultural systems. Other individual peasant movements have taken local action to alter the relationships between producers and consumers at local and regional levels.

A specific example from Brazil briefly illustrates how a peasant initiative, even in incipient and localised ways, works to stimulate change from a commodity-production structure to an alternative food regime that fosters closer relations between producers, consumers, and the local environment. The central Brazilian state of Mato Grosso has long been an extractivist, export-oriented economy, transitioning from diamonds, timber, cattle, and sugarcane to being the 'soybean export capital of the world', achieved in the mid-1990s after investment by international and national agribusiness in the development of soybean varieties that could survive local ecological conditions. Food security is an issue in the region; with arable land dominated by export commodities, food for local consumption is often trucked in from coastal Brazil.

By 2004, environmental and agro-export conditions had changed. One former soybean plantation worker remarked 'when I arrived here, we would go six months without seeing a cloud. Now, it rains in the dry season. Droughts now ruin the crop growth, and the rain ruins the harvest'.⁷ Local scientists partially attributed the lack of rainfall to widespread forest clearing for agriculture, which had changed micro-climatic and precipitation regimes. At the same time, increasing unemployment and a demand for land by workers led to the establishment of a number of agrarian reform settlements that challenged the previously dominant frontier model of colonisation in this region. These alternative 'ecological' land reform settlements are organised in peri-urban environments by social movements in Mato Grosso, primarily associated with the MST but also with rural worker's unions, the pastoral land commission, and other agricultural organisations (Wittman 2009a). Several of the new settlements established farmer's markets to compete with the company supermarkets in soybean processing centres, and community supported agriculture (CSA) subscription programmes were also initiated in several communities, along with public donations of food to schools, hospitals, and food banks. For example, in 2004, I participated in a weekly 'food sovereignty march' organised by the MST in the town of Sorriso, Mato Grosso, a municipality devastated by unemployment due to falling prices for soybean and timber. In the previous year, Sorriso had 475,000 hectares planted in export-oriented soybean, with only 18,000 hectares planted in subsistence crops including rice, beans, and cassava root, while an estimated 85 percent of fruits and vegetables were imported from outside the region. As part of

⁵Tlaxcala Declaration of La Via Campesina, Tlaxcala, Mexico, 18–21 April 1996.

⁶Peasant movements have collaborated with governments in Japan, Korea, and Ecuador, among others, to propose food self-sufficiency targets (e.g. in 2000, Japan set a 45 percent food self-sufficiency target for 2010). In February 2009, the Ecuadorian legislative assembly passed a Food Sovereignty Law that regulates the agricultural, fishing, and forestry sectors.

⁷Interview #233, MST member, 16 December 2004.

the march, fruits, vegetables, and cassava grown in a nearby MST settlement were delivered door-to-door to needy residents. A participant in the march, who had also worked for many years on an agri-business plantation, remarked about the ‘great transformation in his life – a great opening’ in the way that he viewed changing forms of production and consumption relations in his community.⁸

Key in these initiatives is the incipient establishment of ‘authentic relationships’ (Hendrickson and Heffernan 2002) between producers and consumers through face-to-face contact and education about production practices. In its proposal for a ‘family farm based sustainable agriculture’, La Vía Campesina argues that products grown for their own families and consumers of the same region ‘assures contact and transparency between farmers and consumers’ (La Vía Campesina 2002). Members of the MST also spoke to me about farmer’s markets and local distribution networks as a place for educating consumers about differences between local and global food systems, and the importance of fostering a regional food production regime that could promote food sovereignty through sustainable agriculture.

Reconnecting agriculture and nature through agro-ecology

Men, women, human beings [now live] as if they had dominion over nature. We need to consider that other elements also exist within nature, and for that reason nature must be respected. We need to have a harmonious relation because nature needs humans and humans need nature.⁹

Despite internal contradictions and inconsistencies from within its diverse membership that will be discussed below, in its international conferences and debates La Vía Campesina has produced position papers proposing an agro-ecological alternative to the industrial and global-trade based model of agriculture. These documents argue that

This economic system treats both people and nature as a means to an end with the sole aim of generating profits [and] undermines all forms of small-scale family farm and peasant agriculture which are based on the sustainable use of local resources for the production of quality food for local consumption. (La Vía Campesina 2002)

While a universal practice of an alternative sustainable agriculture certainly is far from apparent across the worldwide peasantry, a number of current peasant-led agricultural initiatives are attempting to create alternatives to the industrial model. Agro-ecology, ‘the technological flag of the resistance movement’, involves designing and testing systems for small farmers, using a blend of traditional and localised knowledge and modern agricultural science in order to maintain food security and genetic and cultural diversity (Altieri 1995). It emphasises environmental sustainability and working ‘with nature’ rather than overcoming it to increase yields in marginal environments, while conserving soil fertility and biodiversity. Following the development of agro-ecological methods among small farmer organisations and movements worldwide (cf. Cohn *et al.* 2006, Holt-Giménez 2006), the MST has developed localised methods of agro-ecological cultivation in Brazil, with attention to the regional and cultural diversity of small-scale agricultural systems.

⁸Interview #245, MST member, 17 December 2004.

⁹Interview #243, peasant leader, Brazil, 16 June 2006.

An important aspect in implementing agro-ecology involves training new agricultural technicians to provide extension in agro-ecological practices. State and private sector agricultural extension in Mato Grosso is, to quote an MST member, ‘teaching us how to read the label on agro-chemicals’. The MST as a movement has critiqued traditional government technical assistance and built new relationships with regional universities and alternative providers of technical assistance in various locations throughout Brazil. For example, MST members from Mato Grosso are trained in an MST-run agricultural school in southern Brazil, or by several local universities that began an agro-ecological technical training programme in 2000 in collaboration with the MST. Another MST-designed farmer-to-farmer extension programme called *Pé no Chão* (Feet on the Ground) trains settlers in low cost, organic home remedies for pests and teaches organic production skills using crop rotation, inter-cropping, and green manure practices. This extension programme is designed to be replicated through family level group organisations and the activities of settlement production sub-committees.

MST farmers in Mato Grosso recognise the structuring effects of the local ecological system on their food and farming choices. Because of the social nature of their exchange, seeds are a key socio-nature interface. Farmers in Mato Grosso have found that regional varieties of seeds (especially beans) have much higher yield and require less pest management than hybrid or non-local seeds promoted by local seed companies and government extension agents. This recognition of local ecological limits to seed viability and production has informed the MST seed campaign, which encourages local ‘seed sovereignty’ or control over local seed and genetic resources as a direct response to the increasingly limited seed sources controlled by agribusiness.

Seed sovereignty as agrarian citizenship?

The farmers love biodiversity. It guarantees them seeds and life.
– La Via Campesina Mística, COP-9, Bonn, May 2008¹⁰

To build a campaign for seed sovereignty, MST and La Via Campesina have participated in the last two meetings of the Convention on Biological Diversity (COP-8 in Curitiba, Brazil in 2006 and COP-9 in Bonn, Germany in May 2008). In both instances, members protested the concentration of seed ownership in relation to the ability of small farmers to access locally viable seed stock and also for the ecological implications of genetic modification of seeds, with particular concern for ‘Terminator’ technology that disrupts the biological ability of a seed to reproduce itself and thus be saved for use for subsequent generations – the very foundation of a socio-ecological metabolism.

La Via Campesina delegation met with the Executive Secretary of the Convention on Biological Diversity in Curitiba to relate their concerns about the possible lifting of the moratorium on the Terminator Seed. Francisca Rodriguez, a representative from Chile, said at that meeting, ‘We will not stop until Terminator disappears from the face of the earth’, an appeal that was ultimately successful as the moratorium was upheld despite opposition from the US, Canada, New Zealand, and Australia (ETC Group 2006). As stated in a press release of 27 March 2006, ‘the

¹⁰Mystica video, available from: <http://www.youtube.com/watch?v=58aIIJSyCS0> [Accessed 14 October 2008].

rejection of the “suicide seeds” is an essential step for securely implementing the proposals on agro-biodiversity, biodiversity, and food sovereignty discussed in the COP-8’ (La Vía Campesina 2006).

La Vía Campesina and member organisations continue to be active on international food policy agendas around the topic of seed sovereignty and the protection of global agro-biodiversity. Their critique is centred upon the monopolisation of genetic resources by multinational corporations, which has, in their view, threatened the loss of heritage seed varieties adapted to local landscapes and ecological conditions. In an era of climatic uncertainty, access to biologically resilient seeds that can be utilised under changing conditions is important for ensuring not only local food security but also a foundation for agro-ecological resilience. By recognising the importance of biological and genetic diversity, the seed campaign seeks to ensure the viability of local community seed varieties while also embracing peasant innovation in diversifying agricultural landscapes. As one MST activist commented regarding their seed initiatives,

We are searching for technological change in the area of seeds. This isn’t just looking for seeds from our grandparent’s past just because it’s a seed that our grandparents planted. We are looking to improve that seed, not within the concept of change related to agro-chemicals or transgenics, but within a technological change that is productive, that is honourable for the producer. . . . What’s important is that these seeds and this agricultural productivity aren’t in the hands of a company that guards these seeds, that guards this historical archive, but that they’re produced by the population in millions and that a million peasants can reproduce this technology so that it’s at the service of agrarian reform and not for some companies to earn money later. It’s to be *absorbed* by the people. We already have several varieties of seeds, many of them have a much higher productivity than the agrochemical ones. And they cost less.¹¹

Seeds are biological phenomena – plants, by their nature, produce seeds, which are made available for food (e.g. cereal grains) or are stored and planted for further use as seed stock. The potential reciprocity between humanity and nature is especially evident here, as the seed biodiversity of food crops has expanded tremendously through human actions over the past millennia, even as the number of commercially grown and available species continues to diminish under the industrial food regime. As one activist puts it,

It’s in the name of ‘humanity’ that imperialist governments and multinationals appropriate biodiversity and anything that can be turned into merchandise for themselves. . . . We’re talking about humanity in a different sense. We’re talking about all the human beings on planet Earth, of future generations. We’re also talking about taking care of those things that *can’t* be appropriated by one person, by one corporation.¹²

The dissemination and preservation of locally adapted seeds by autonomous peasant communities, even in incipient and localised ways, thus could begin to disrupt the trend towards specialisation and commoditisation within the dominant model of agricultural production. The politicisation of seeds as ‘the patrimony of humanity’, along with the potential for scaling up attempts to re-create links between consumers and producers and fostering local food production capacity through agro-ecology,

¹¹Interview #5, 19 November 2003.

¹²Interview #164, 14 July 2006.

brings us back, however, to the question of the challenges and contradictions in achieving a metabolic relationship with nature that involves the preservation of rights and responsibilities in political, social, and material reproduction.

Could a food sovereignty model repair the metabolic rift?

Several challenges can be identified for the widespread adoption of a food sovereignty model of agricultural production. The ability of peasant movements to address the internal and external contradictions of the current global food regime is made more complex by class differentiation among the agricultural sector and political and ideological differences (Borras *et al.* 2008, Edelman 2008), as well as by issues having to do with ecological and socio-economic conjunctures.

Many agrarian social movements (comprised of both peasants and small to medium scale commercial farmers, affiliated or not with LVC) share common general positions on issues as diverse as legalisation over genetically modified organisms (GMOs), the importance of land reform, protection of local and national markets, and ensuring access to agricultural inputs. At the same time, class-based political and ideological disagreements (in addition to gender and ethnic differences within and between movements) exist on strategies, tactics and timing, and the extent to which common positions are actually implemented by a diversified base (Borras 2008, Borras *et al.* 2008, Edelman 2008). This divergence between common global positions and diversification of response at the grassroots limits the strength of a globally united 'push' against the current food production regime.

Political, class and ideological differences within and between movements are exemplified not only in gaps in political representation and accountability but also in material/ecological practices. For example, many current and former members of the MST, especially in southern Brazil, cultivate GM soybeans despite criticism by the movement leadership. Moreover, worldwide in 2007, 90 percent of the 13.3 million producers cultivating transgenic crops were small-scale farmers, mostly growing bt Cotton in China and India (ISAAA 2008). Debates about the relative merits of growing GM crops among smallholders reflect a complex set of issues having to do with economic survival, available markets, property rights, values, and politics (Scoones 2008). Likewise, while a number of transnational peasant movements profess common agendas with particular environmental campaigns, 'partnerships across and within [agrarian and environmental] movements and transnationally have not been consistent' (Peluso *et al.* 2008, 401). Agrarian movements also struggle to situate themselves in relation to widespread environmental advocacy for 'land-sparing farming' which advocates the concentration and intensification of agriculture in favour of preserving non-agricultural habitat (McNeely and Sherr 2002).

Finally, while movement leaders claim that a food sovereignty model can 'feed the world', highlighting the fact that only about 10 percent of global food production is exported (Weis 2007, 21),¹³ it is a reality that today over 1 billion people go hungry due to increasing poverty and the inability to purchase food, even food which is grown within national borders (FAO 2008). Competing tendencies for land concentration and land reform (Rosset *et al.* 2006, Borras

¹³And this is highly concentrated – 62 percent of agro-exports originate in a handful of countries that comprise only 4 percent of the agricultural population (Weis 2007, 21).

2007) and the reduction in state expenditures on agricultural extension targeted at small scale and poor farmers (Altieri and Nicholls 2008) also limit the ability of peasant and small producers to rapidly ‘scale up’ or extend agro-ecological production models.

Agrarian citizenship: between class and state

To access the material resources (including land, technology, inputs) needed to engender a food sovereignty model that re-works the metabolic relationship between society and nature, alternative social movements have begun to link material practices to local, global, and transnational advocacy networks (Holt-Giménez 2006). The argument here is that agrarian citizenship (as practiced by a diverse and class-differentiated peasantry) works on a number of levels, both locally in terms of material/ecological diversity in food production and on local, national, and global political campaigns that emerge from continual (and sometimes competing) dialogue about how to transform the global/corporate food regime. Agrarian citizenship provides a conceptual apparatus to understand how a diverse peasantry engages in both contradictory and complementary material and political practices, which result in differentiated positions within agrarian groups (small/medium farmers) to target financial capital (agribusiness) and the state from different points in the system. Analyses of varying positions within the Global Campaign on Agrarian Reform (Borras 2008) are a case in point. The fundamentally class-based struggle over access to land is fraught with contradictions (with some groups accepting a market-led approach), but its focus on participation and mediating local and global struggles allows for dialogue between sub-groups that may otherwise have competing class interests in distinct political and economic contexts. The recent rejection of GM rice in Brazil is another example in which long-time opponents of GMOs in Brazil (La Vía Campesina, MST) joined a coalition of larger producers including Federarroz (Federation of Associations of Rice Farmers) and Farsul (Federation of Agriculture of the state of Rio Grande do Sul) in a common position against legalisation (Melo 2009).¹⁴ Radical/cross-class agrarian participation allows more than just a focus on citizenship’s ‘legal obligations and entitlements’ (Hickey and Mohan 2005) or a narrow focus on class or property status, instead moving towards a more nuanced attention to what is actually going on in the countryside – participation in what, and for whom? Against the argument that ‘citizenship ... can have no real meaning in a capitalist system where there are still class differences’ (Brass 2007, 608), I argue that it is precisely the struggle to overcome these differences through participation in material and political struggles – via multiple roles of producer, activist, and local/global citizen (Newell 2008, 367) – that constitutes the contemporary landscape of citizenship. In that sense, agrarian citizenship is not conceived as a ‘clientelistic incorporation of the [rural] poor’ (Fox 1994, 159), but rather a contested space for dialectical negotiation between nature, state, and society.

¹⁴This is especially interesting considering that many Farsul members regularly cultivate GM soy. Their opposition to the legalisation of GM rice was based on economic and environmental criteria specific to rice production.

Conclusion

I return to the question of whether, and to what extent, ongoing cycles of agro-ecological transformation that resulted in crises of environmental and social degradation (Moore 2000, 142–5) have fully erased the possibility of a return to a socio-ecological metabolism based on agrarian citizenship and a natural contract between society and nature. What mechanisms could ‘bring society and nature back in’ to agriculture?

Critics suggest that Polanyi’s movement-counter movement dynamic offers no theory about the agencies underpinning such movements. This paper argues, following Foster, Moore, and O’Connor, among others, that it is precisely the socio-ecological contradictions outlined here that provide the stimulus for change. Cycles of agro-ecological change since the advent of capitalism have increasingly resulted in the separation or ‘abstraction of agriculture from its ecological and cultural foundations’ (McMichael 2003, 173). The widening and deepening of the metabolic rift has created both social and ecological crises of reproduction, opening fissures for change in which the food sovereignty movement, based on the principles of agrarian citizenship, ecological sustainability, and social justice, proposes a distinct departure from the dominant mode of production. This paper has outlined the ways in which the food sovereignty movement challenges the specific laws of motion underlying the metabolic rift (the commodification of land and labour, the simplification and rationalisation of agriculture) and described the precursors of a burgeoning movement that challenges those laws of motion.

This paper has also emphasised that it is important to ‘bring nature back in’ to understanding agro-ecological change involving both material and social processes. One approach has been to identify the ‘lively’ or material agency of nature (Castree 1995, Goodman 2001). The relationship between capitalist expansion and soil degradation is discussed in Marx and Engel’s early work (Marx 1973 [1939], 1975), while more recent technological interventions leading to tapering yield increases (e.g. Green Revolution) suggest that the ability of capitalism to increase or sustain agricultural productivity is reaching its ecological limits. Activities that exceed nature’s natural limits can thus produce an ecological backlash or ‘boomerang’ effect (Beck 1992) with negative economic, social and environmental effects. For example, Mittelman (1998) shows how ‘nature’s protest’ in the form of environmental degradation opens up political space for environmental resistance movements in Eastern Asia and Southern Africa. The ‘lively’ features of nature thus provide opportunities but also shape and constrain human activity.

According to this logic, the environmental reaction (or counter movement) is an inherent ecological crisis-inducing contradiction in capitalism (O’Connor 1991, 1998). The environmental backlash or boomerang reduces the ability of market exploitation of natural resources by changing the conditions of production through soil or climate change, for example. Thus the concept of a metabolic relationship between society and nature is dynamic, allowing for society–nature relations to change through time and space, in adaptive response to social, environmental, and technical change. Building on this idea, understanding agro-ecological transformation as the product of a socio-ecological double movement allows us to simultaneously incorporate the material (appropriation and transformation of

nature through labour) and the symbolic construction (negotiated and contested terrain) of society–nature relations.

Can we allow for environmental agency in the construction of agrarian landscapes without succumbing to ecological determinism? Foster (1999, 397) identifies the fallacy of the false dichotomy between anthropocentrism and eco-centrism. Eco-centrism runs the risk of losing sight of the social construction of many seemingly ‘natural’ systems. If we consider agency as action that can constrain or shape, without necessarily ascribing intentionality or volition to the environment, it is useful to consider the environment as an actor, not just something that is acted upon by individuals, groups, communities, or societies. This theoretical stance allows us a vision of society and nature that truly reflects a metabolic state, in which social and natural actors affect one another through a series of pathways. Across and through landscapes, in space and time, the biophysical environment, constituted by a number of interconnected ecological systems, exists and influences the actions of groups and societies, which at the same time materially and symbolically (re)create nature.

Karl Polanyi’s work on the double movement dynamic between the expansion of market capitalism and the reaction of civil society to that expansion reminds us that we need to look more closely at the lived experience of contemporary agents facing social and environmental change. In this way we can understand and even predict a linked social and ecological reaction that could truly be described as an agro-ecological countermovement. This movement of both society and nature, in a metabolic model responding to social and ecological crisis, is based on the movement of active social and ecological processes reacting to the excesses of the increasingly globalised market that depends on the ongoing separation between individuals, society, and the ecological basis of reproduction. Active society, for Polanyi, occupies a specific institutional space within capitalism between the economy and the state. This linkage of ‘agrarian’ citizens, acting in response to and in concert with nature, is founded upon a reconfigured notion of the rights and responsibilities between humanity and nature and a revised agrarian rationality. Actively reconstituting itself in the face of market pressure, modern agrarian citizenship can be said to reclaim the notion of a humanistic community that not only demands state re-regulation of the market but also acts to protect itself against the continued decimation of social and ecological spaces.

A food sovereignty movement based on agrarian citizenship may not yet constitute a ‘coherent political economy of an alternative global agrarianism’ (Akram-Lodhi 2007, 556). Given the geographic diversity of the member associations of movements like La Vía Campesina, as well as internal and regional contestations over longstanding issues of gender, class, and ethnicity both within and between movements, the constitution of a unified or cohesive agro-ecological alternative to globalised and capitalist agriculture may not be immediately forthcoming. However, globally emerging signals of change, and international dialogue around new principles of agrarian citizenship and food sovereignty, as evidenced in the diversity practices of groups like the MST and LVC, are signs that movements and individuals are recognising and acting upon fissures and contradictions in the current system. It is perhaps the geographical, ecological, social and economic diversity of this activity, rather than its uniformity, that will best be able to address socio-ecological contradictions in the global food system.

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