11. Food and agriculture
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Global environmental governance, competition, and sustainability in global agriculture

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World-system scholars are well aware that no matter how the elusive term “sustainable” might be defined, conventional capitalist agriculture is anything but (Foster and Magdoff 2000). While for millennia social groups had indeed found ways to overproduce, to overuse, to ignore (often at their peril) the intimate links between agriculture and surrounding ecosystems (Chew 2007; Moore 2003), the capitalist conversion of agriculture revolutionized the scale of the flows of food, and other natural resources from the countryside to cities (Foster 1994, 1999). This process has led to various “crises of the soil” throughout modern history (Foster and Burkett 2000: 420). Indeed, agriculture is the classic example of how indiscriminately applying technology solely to maximize yields can cause socio-ecological destruction. For in agriculture, all the usages of the term “yield” are brought into play: yields in the sense that technologies are designed to expropriate from the soil (and from farm workers) all its vitality; yields in the sense that the goal is to generate as much product as possible; yields in the sense that the product is a harvest, a living crop for consumption; and yields in the sense that the desired outcome is maximum economic gains.

In capitalist agriculture, these yields can not be maintained without the constant application of dangerous inputs. Today these are pesticides, herbicides, fungicides, and fertilizers that degrade the immediate and surrounding socio-ecological landscape. The unsustainable nature of capitalist agriculture was something recognized by political economists at its naissance:

In modern agriculture, as in urban industry, the increase in the productivity and the mobility of labor is purchased at the cost of laying waste and debilitating labour-power itself. Moreover, all progress in capitalist agriculture is a progress in the art, not only of robbing the worker, but of robbing the soil; all progress in increasing the fertility of the soil for a given time is a progress towards ruining the more long-lasting sources of that fertility. The more a country proceeds from large-scale industry as the background of its development, as in the case of the United States, the more rapid is this process of destruction.

(Marx 1977 [1867]: 638)

From the Industrial Revolution onward, agriculture (especially, but not exclusively, in grains) became increasingly global whilst continuing the deeper-rooted process of distancing practitioners...
from the ecological fabric of the landscape (Polanyi 2001). Intensification generated the need for entire markets for inputs to replace nutrient loss, and to destroy pests that thrived in the mono-crop systems that came to dominate industrial agriculture (Friedmann 2000).

From the 1940s to the late 1970s, Green Revolution technologies disseminated worldwide provided new chemical-intensive means of production that were far more damaging than simply snatching “more produce from the soil by robbing it of its fertility” (Marx 1977 [1867]: 376). Agricultural practices became equipped with fossil fuel–dependent technologies to run machinery, provide chemical inputs and pump irrigation water, with huge energy increases occurring in peripheral zones. For example, from 1955–2000, China’s fossil energy use in agriculture increased 100-fold (Goodland and Pimentel 2000).

True to Marx’s prediction, the United States proved to be a hotspot for such developments (Carson 1994; Kloppenburg 2004), but the effects were shared with the world entire. Starting in the early 1940s, high-yielding plants dependent on pesticides, fungicides, fertilizers, and irrigation were bred by the Rockefeller and Ford Foundations and integrated into the world-economy (McMichael 2003). “Petro-farming” reconfigured agriculture to depend entirely on fossil fuels, from pre-plant soil treatment to commodity transport (Walker 2004). Consequently, global grain production, as well as chemical input use, increased from 1950–90 worldwide. However, the increases were unevenly distributed; for example, whereas Latin America experienced increased per capita food production, Sub-Saharan Africa experienced a decrease (Jorgenson and Kuykendall 2008). As core–based transnational corporations further integrate farming systems into the global economy, we can expect chemical and water-intensive crop use to increase, with consequential negative effects on socio-ecological systems (Altieri 2000; Longo and York 2008). At present, some of those consequences include 10,000 annual pesticide poisoning deaths in peripheral countries, 400,000 pesticide poisonings worldwide (Jorgenson and Kuykendall 2008), and the creation of 200 dead zones in oceans due to nitrate (fertilizer) contamination (Speth 2008). Eighty percent of agricultural land in dry regions suffers from desertification—typically caused by overuse and mismanaged irrigation, but also by population growth and poverty—affecting mostly Africa (70 percent dry land), but also India and other parts of Asia, northern Mexico, and the southwestern United States (Speth and Haas 2006).

**Global environmental governance and global agriculture**

Global environmental governance is a world order led by the core countries, albeit with constant contestation by various institutions and social groups. In practice, it amounts to reinforcing what McMichael posits “development” represents: “the political relations of global capitalism” (2007: 170). Over the years, the global governance of both agriculture and the environment has been systematically designed as “ideological expression[s] of capitalist development” (McMichael 2007: 170). Unfortunately, attempts to make more equitable global agricultural and environmental sustainability have been, on the whole, rather dismal failures.

The idea of global environmental governance arose out of the recognition of global social and environmental interdependence in the late nineteenth century (Frank 1997). As countries became more strongly tied to the world-system, core states pressured others to participate, thus linking state participation in global environmental governance with state legitimacy (Frank et al 2000). Roberts (1996) shows that peripheral and semiperipheral countries have participated less in environmental treaties than core countries for all manner of reasons, including the fact that poor economic conditions dissuade any commitment that would reduce natural resource-extraction, and that repressive regimes are less willing to listen to demands from civil society. Nevertheless, participation in global environmental governance spread worldwide, likely augmented by
environmental movements in peripheral countries in the 1980s (Schaeffer 1999), culminating most clearly in the 1992 Rio Earth Summit.

Efforts to govern food distribution via global governance emerged in the mid-1940s with the establishment of the UN Food and Agriculture Organization (FAO). The FAO’s mandate was to direct international trade in order to “stabilize world agriculture and establish food security” (McMichael 2007: 172). Simultaneously, the FAO served to disseminate the widespread use of petro-farming and legitimize the penetration of core zone firms and states into peripheral markets. In its efforts to contain the Soviet Union, the United States established bilateral food programs with key peripheral and semiperipheral states (such as Mexico, Brazil, and India), which served to subsidize industries in the periphery whilst helping the US agro-industrial complex to manage its domestic over-production problem (Bartley and Bergesen 1997; Friedmann 1982).

The Green Revolution served as the basis for a new phase of capitalism—neoliberalism. Peasant agro-ecosystems worldwide were subjected to brutal shifts to make room for higher yielding hybrid crops. Laboratory-produced privatized seeds linked bio-technology to the global food market as never before. Peripheral zones became interlocked into the petro-farming treadmill that increased global food production at the cheapest world market prices in history (from 1980–2000) by combining agro-technologies with cheap labor, expropriated nutrient-rich land, and minimal water costs (Moore 2009). Recognizing agriculture as “the stepchild of development,” World Bank President Robert McNamara standardized the use of “the transnational development agency network” to link global governance to rural farmers (Goldman 2005: 71–71). This energy-intensive system reached its highpoint in the 1980s, when, for example, global grain production peaked (IMF 2008). Via Structural Adjustment Programs, the World Bank and IMF virtually coerced peripheral countries into opening their markets to the core and shifting emphasis to agro-exportation and away from domestic foodstuffs:

The resulting expanded, and energy-intensive, circulation of food on a global scale was institutionalized in the [World Trade Organization]’s 1995 Agreement on Agriculture, which prescribes a model of agriculture that has basically only one dimension: increasing agricultural production for exports, importing what cannot be produced without tariff protection or subsidies … .

(McMichael 2007: 174)

Thus, neoliberalism became embedded in the governance of global agriculture, which has dispossessed up to 30 million people who lost their land due to trade liberalization, not to mention exacerbating the spread of environmental degradation associated with capitalist agriculture, as mentioned above (McMichael 2007).

While the neoliberal shift in agriculture has been explained by world-systems scholars in political economic terms (Cf. McMichael 2007; Moore 2009), it is useful to illustrate the concomitant ideological shift in global environmental governance. Such an exposition highlights the extreme difficulty that social movements will face when attempting to change state tactics in the global arena in the neoliberal phase of capitalism. Social movements and other factions of global civil society will find it increasingly difficult to force global governing bodies to consider the needs of the poor, the food-insecure, and those suffering from environmental degradation via demands that the Rousseauian general will or the global environment be considered. In global environmental governance today, the will supreme is that of competition and protectionism of core industries.
From Stockholm to Copenhagen, from global environmental welfare to free market ideology

The 1972 UN Conference on the Human Environment (UNCHE) held in Stockholm took place when environmental concern among core citizens was extremely high, as was their trust in “big government” (Frank 1997). Command-and-control regulation of industry by the state and demand for multilateral governing regimes became mantras of the early core zone environmental movements. Regulation of the economy and of citizen consumption rates was not, as they are today, seen as being contradictory to democratic freedoms. Early environmental movement scholar William Ophuls expressed what was commonly felt among the growingly concerned public: “Man is a passionate being,” he stated, and requires “checks on will and appetite; if these checks are not self-imposed, they must be applied externally as fetters by a sovereign power” (Ophuls 2004: 60). In Stockholm, states were urged by core zone citizenry to develop international environmental law in response to environmental destruction caused by industry (Speth and Haas 2006). Core citizens supported the state’s role in intervening in the market. This approach to alleviating environmental destruction typified the political culture of the welfare state, which worked to de-commodify areas of economic and social life deemed too valuable to be subjected to market forces.

After Stockholm international environmental treaties grew in number, the United Nations Environmental Programme (UNEP) was created. Some examples include the 1973 International Convention for the Prevention of Pollution from Ships, the 1973 Convention on the International Trade in Endangered Species, the 1974 Paris Convention for the Prevention of Marine Pollution from Land-based Sources, the 1979 Convention on the Conservation of Migratory Species of Wild Animals, and the 1979 Convention on Long-range Transboundary Air Pollution. The 1980s witnessed global agreements on more complicated environmental issues, including the 1985 Vienna Convention on the Protection of the Ozone Layer, the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, the 1982 UN Convention on the Law of the Sea, the 1989 Basel Convention on Control of Transboundary Movements of Hazardous Wastes and their Disposal, and, in the next decade, the 1992 Framework Convention on Climate Change. This surge in global environmental treaties signified a rise in conviction that strong state intervention combined with new multilateral agreements could resolve global ecological issues (Hunter et al 2006: 173–74). Studies on issues such as the CFC-ozone link by Rowland and Molina (1975) and the National Academy of Science’s Charney Report on climate change (NAS 1979) played major roles in encouraging core countries to take precautionary measures to control pollution on national and global scales.

After Stockholm, the next milestone was naturally the 1987 Montreal Protocol, which made use of the precautionary principle to phase out chlorofluorocarbons (CFCs) before understanding of the human impact of ozone layer loss was conclusive. In harmony with attitudes on environmental regulation expressed in Stockholm, the Montreal Protocol utilized command-and-control measures to compel industry to develop CFC substitutes. The results were successful: today over 95 percent of CFCs are phased out (Gareau 2010). For two decades, the impetus to create stronger global governance, begun in Stockholm, continued. After the fall of the Berlin Wall, cries for a world-government were not uncommon. International environmental law scholars called for centralized, powerful global governing bodies to manage the ecology of the world-system, just as peripheral states had acquiesced control to the WTO regarding international trade (Gareau and DuPuis 2009). Global environmental problems, it was argued, required the creation of “a proper international environmental agency within the United Nations system that has real power and authority” (Palmer 1992: 262).
Similar to the effects of the 1995 WTO Agreement on Agriculture, the 1992 UN Conference on Environment and Development (the Rio Earth Summit) marked the moment in which market-based approaches became a central focus of global environmental governance. With the promotion of the 1987 Brundtland Report (1987) at the Earth Summit, “sustainable development” discourse gained prominence, linking environmental degradation to poverty (Lélé 1991). However, Rio Summit deliberations de-emphasized command-and-control regulations, questioned erstwhile accepted “limits to growth” arguments (Meadows 1972), and were exposed to a rash of business/government partnership solutions partly through participation by the Business Council for Sustainable Development. Nevertheless, the Rio Summit still contained the attitude that global environmental governance was the appropriate arena in which to tackle global environmental problems, with advocates pointing to the Montreal Protocol as evidence. Therefore, in the Agenda 21 language of the Rio Summit, the role of the state remained clearly central in each of its 23 principles.

Thenceforth, however, core zones intensified the political/environmental focus on the broader neoliberal agenda. With the 1980s global financial crisis, the rise of Reaganomics and Thatcherism among conservatives, and the surfacing of the post-Soviet era, the US position on global politics increasingly reflected a “global managerial state of mind” which “reformulated the post-1989 question of democratization and governance, and the green revolution era concerns with redistribution and equity, into the neoliberal question of the freedom and sovereignty of capital” (Goldman 2005: 91). Here, the United States promoted the privatization of state institutions, opening areas of society and the environment previously protected from market forces through elimination of command-and-control regulatory instruments (Harvey 2005), and the promotion of stakeholder politics over the usage of society-based measures (DuPuis and Gareau 2008). The core countries promoted the application of these principles to environmental issues by emphasizing free-marketeering and decentralized governance (Tickell and Peck 2003: 167). This “Washington Consensus” was “increasingly negative on multilateralism, environmental regulation, the United Nations, foreign aid, and treaties and similar agreements, and, indeed, government itself” (Speth and Haas 2006: 80, our emphasis).

The 2002 World Summit on Sustainable Development in Johannesburg marked the wholesale move toward the Washington Consensus in global environmental governance. Business coalitions took a central role, calling for business-government partnerships and expressing “a serious doubt about whether a multilateral system is able to effectively address our sustainable development challenges” (Stigson 2004: 267). Rather, they argued it was necessary for governments, “in consultation with business, to create the conditions that allow business to contribute fully to sustainable development…. If financial markets do not understand and reward sustainable behavior, progress will be slow” (Stigson 2004: 266, our emphasis). At the World Summit, Meena Rahman, Chairperson of Friends of the Earth, exclaimed that “nothing happened since Rio in 1992 because governments embraced a neoliberal agenda, which represents the interest of big powers” (UNEP 2004). Indeed, the principal outcome of the World Summit was a lack of commitment from core zone governments to provide aid, and instead, to promote voluntary business/government partnerships (Roberts and Parks 2007).

Outcomes of the 2009 UNFCCC 15th Conference of the Parties (COP 15) held in Copenhagen further suggest that global environmental governance is experiencing a devolution as markets and market-based principles are employed to defend environmental (in)action. Since first refusing to sign the Kyoto Protocol in 1998, the United States has argued that a global trading scheme would be unfair to core zones because the global South is exempt from any immediate carbon reductions (although the United States led the adoption of the Montreal Protocol, which also did not bind peripheral countries to immediate cuts. See Nordhaus and Boyer [2000]; Gareau [2010]). At
COP 15, the Copenhagen Accord, which was “taken note of” but not adopted (UNFCCC 2009: 19), was drafted by the United States, China, India, Brazil, and South Africa behind closed doors. Although the Yale Climate Project found that a vast majority of Americans—regardless of political affiliation—support the passage of federal climate and energy policies, including over 70 percent supporting the regulation of CO\textsubscript{2} as a pollutant, US leadership at the global scale remains tenuous. Some critics blamed COP 15 failures on the US Senate and President Obama. They argued that by negotiating the Copenhagen Accord with only a select group of nations, most UN member states were excluded. Others observed how the British and American governments both blamed China for the failure of the talks, but others still noted that Obama placed China in an impossible position by demanding concessions while offering none. These arguments are all valid, yet it is important to also remember that current environmental crises require an historically unprecedented conversion in frame of mind for citizens in the core countries. As George Monbiot laments, “It is a campaign not for abundance but for austerity, … not for more freedom but for less, … not just against other people, but against ourselves” (2006: 215).

Monbiot’s sentiments echo arguments made by Ophuls and others in the 1970s, and they appear grossly outdated when considering the neoliberal turn in global environmental affairs. Recognizing world-system theoretical understandings of the ability of global competition to stall progress in global governance, we are left pessimistic about the role that global environmental regimes will play in alleviating present and future global environmental problems, including those associated with agriculture. The answer to a more “sustainable” agriculture will likely come from political economic conditions and institutional reforms pressured by social groups in the semiperiphery, probably in Asia, and perhaps centered in organic production in China.

Conclusion

With 80 percent of the 1$US billion spent daily on agricultural subsidies going to farmers in the EU, United States, and Japan (Pinstrup-Andersen 2002), it is clear that neoliberal agro-policies are unevenly shouldered by the peripheral and semiperipheral zones (Bello 2009). However, as Arrighi (1994, 2007) points out, amid the expansion and decline of Western-dominated neoliberal globalization, China has been able to create a quasi-neoliberal platform of its own. With stringent state-controlled economic growth, China has succeeded in developing an export-oriented capitalist mode of production, a project that it began in the early post-Mao period (Borrego 1990). In the agro-sector in particular, this process does not rely on “market forces” alone to attract investment, but importantly it involves state intervention in the management of local and regional resources and governance “links” in the global commodity network (Peine and McMichael 2005). The organic sector is emerging as a mainstream network that may help create a more sustainable agro-industrial complex. Yet the export-oriented nature of China’s growing agro-market threatens to limit the socio-ecological sustainability of its organic model.

Worldwide, organic production systems are increasingly challenged by commercial conventions rooted in economic competition (Raynolds 2004). They are increasingly taking the shape of conventional commodity chains that have existed for centuries, as world-system analysts have understood them (Hopkins and Wallerstein 1986). Today, China is arguably molding the structure of the future of organic agriculture, one that makes use of interregional commodity networks that may soon become global. Unlike the EU and the US’s historical rootedness in a local, bottom-up, ideologically-driven organic sector, China’s model is export-oriented, top-down, and price-driven. It regards the organic farm firstly as an economic enterprise, and it uses core zone standards as its national guide in order to potentially access those markets. As Paull relates, “there is
potential for China to redefine the standard for internationally traded food, as certified organic” (Paull 2008: 272).

While there is no denying that China has accelerated its energy-intensive and ecologically destructive agro-industrial production platform (Sachs 1999; Yang 2007; Ye et al 2002), here we also find astounding acceleration of its organic sector. Re-initiating its ancient agricultural practices in the 1980s with government-funded research, by the 1990s, China had already churned out 7 million hectares devoted to organic agriculture projects, which has led to economic growth in the region in some cases (Marsden 2006: 193). In 2002, it was estimated that certified organic production in China exceeded 40,000 hectares (Marsden 2006), and by 2005 estimates stated that acreage reached roughly 700,000 hectares, generating 3.7 billion Yuan in revenue and close to $150US million in exports (IFAD 2005). Moreover, organic processing companies were established in international supply chains (Yang 2007). By 2005–06 China’s global ranking in number of hectares devoted to organic moved from forty-fifth to second, to 3.5 million hectares. Now, China is the global leader in terms of organically cultivated acreage. In 2005–06 alone, China accounted for over 60 percent of the world’s annual increase in organic land (Paull 2008).

While China regulates what are probably “the most stringent of production and conformity assessment requirements” (Willer and Klicher 2009), the EU and United States have yet to recognize their organic produce domestically. This is significant because the core zones contain more organic demand than they can produce, and their citizenry willingly pay the higher prices (Raynolds 2004). Meanwhile, Southeast Asian countries (where 70 percent of agricultural trade is still interregional) have collaborated on strengthening their organic network and creating an inspection/ certification standard for the region’s growers who seek international recognition (Willer and Klicher 2009). While the declining Western hegemonic powers will continue to struggle to protect themselves from the immersion of China into their organic agro-markets, it is likely that this organic sector will continue to gain legitimacy and grow, first regionally in Southeast Asia (as others have in Latin America), and then globally.

It is clear that organic is not coterminous with sustainable agriculture. China’s focus on export-oriented growth in organic threatens to continue reorganizing traditional productive relations and decreasing the food security of rural communities whilst increasing tolls on water supplies and other socio-ecological resources. Growing labor shortages and civil unrest, however, might force China to consider food sovereignty, small farms, and diversity (Altieri 2009) in organic production, which could lead to the development of a state-led regional production platform worthy of replication. As we see it, the potentiality of sustainable agricultural networks will probably not grow out of global governance regimes, nor will it grow out of an altruistic counter-cultural movement, or pastoral ideals. Rather, it will likely grow out of state-regulated investment in opportunities to capture market-share in a globalizing sector driven by demand from the core and emerging core zones of the world-economy.

References


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