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Sustainable food systems and global environmental change
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Sustainable food systems and global environmental change—Synthesis paper

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This article responds to the debates surrounding how best to merge sustainable food systems and sustainability goals in the context of biofuel production, industrial livestock operations, and peasant agriculture. Various new initiatives meant to improve the "sustainability" of agricultural production in the aforementioned areas stem from multiple crises facing the global food system. A critical look at some measures, however, reveals consequences that are unhelpful and/or problematic, particularly in addressing issues of equity and justice. This contribution examines arguments made in the three articles addressing the key topic of sustainable food systems in the face of global environmental change. First, a "doubling narrative" that justifies the continuing meatification of diets is confronted. Second, broadening agrofuel regulations and the implementation gaps they create are addressed. Third, I examine some creative alternatives that hold potential to create resilient food systems. Lastly, this contribution explores strategies that coherently make complex connections, which may help stimulate stronger and more effective policy reforms.

Weis's paper fully engages in the debate about whether or not increased food production is needed by analyzing the "doubling narrative" in industrial livestock production. The four prominent drivers used to entrench this narrative are persistent hunger and malnourishment, further population growth, projection of expanding biofuels, and expected dietary changes. Though persuasive in its claims about efficiency and innovation, the doubling narrative contains troubling assumptions that obscure many deep-rooted problems (Weis, this issue). It concurrently hypothesizes pro-poor and pro-growth solutions, and embraces continuing global

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market integration and deepening corporate-control over productive resources, all of which in effect exacerbate world hunger and food insecurity.

In the area of biofuels, an increasing number of initiatives aim to improve the "sustainability" of biofuel production due to concerns arising from the intensified competition for arable land, and numerous negative effects on poor people's livelihoods—all created by biofuels (Hunsberger, this issue). Biofuel governance has expanded its scope to include themes of social and environmental protection. Implementation measures, however, still tend to treat biofuels as a stand-alone sector rather than one activity intertwined in broader agriculture and food systems. This means that biofuel crops are regulated based only on their end use (e.g., for ethanol or biodiesel), which inevitability allows producers to exploit their flexibility in use, and to sidestep regulations. In addition, a proliferation of private certification schemes has enabled producers to choose the least demanding options. These patchy governance initiatives for biofuels are problematic because the social and ecological harms they create at best remain unaddressed and at worst deepen insecurity and inequality.

Questions of how to feed the world in a manner that is environmentally and socially sustainable coincides with renewed interest in peasant agriculture that previously existed on the margins of mainstream discourse (Wise, this issue). In particular, food sovereignty movements have amplified positive qualities of peasant agriculture, which increasingly are influencing reform agendas in some arenas. The Committee on World Food Security (CFS) now includes a diverse network of stakeholders who have helped push to make agroecology and biodiverse agriculture a key component in realizing the human right to food (Ahmed, this issue). Inspired by peasant agriculture, civil society groups such as Food Secure Canada have also adopted inclusive and deliberative processes to arrive at visionary food policies (Food Secure Canada, 2011). While insights from peasant agriculture and new sustainability measures may hold potential to bring about more equitable and/or resilient food systems, existing fragmented food governance policies hinder transformation in this area (Wise, this issue).

All three papers highlight the need to tackle governance policies—such as unfair trade rules and perverse subsidies used to support the increased production of agro-fuels—that accentuate the global food and agriculture crisis. Equally important is the need for systemic shift towards policy priorities that embody the "multi-functionality of agriculture" (McIntyre et al., 2009) in order to build more sustainable food systems that are capable of actually improving global food and nutrition security. However, systemic policy change is perhaps the biggest challenge to reforming and/or transforming mainstream platforms. Thus far, there has been little to no political will from governments and powerful institutions such as the World Trade Organization (WTO) to regulate current unsustainable agricultural practices, or give much policy space for alternatives. Influential organizations like the World Bank, the WTO, and the G8/G20 tend to be unsupportive of and even distance themselves from scientific research such as the IAASTD (Clapp, 2009) that presents the case for alternative agricultural methods, and those advocating for food sovereignty.

Despite a difficult policy environment for food system transformation, strategies that coherently make complex connections might be drawn upon, which may help stimulate stronger and more effective policy reforms over time. A key question is how new approaches to education and coalition building can (re)articulate struggles for food and energy systems that are more just. Weis asks how civic action can help make problems in the food system resonate with the public much more broadly and deeply than they do now (and in both an intellectual and emotive sense).

Weis offers a few paths that might be constructive to confront the meatification of diets. One strategy is to leverage growing health concerns (i.e., obesity and non-communicable diseases) linked to high levels of consumption of animal products and thus stimulate policy reform action. As Weis explains, governments can enforce legislation that would apply excise taxes on animal products to deincentivize industrial livestock production, and/or to re-orient subsidies towards more ecologically efficient plant-based foods. Hunsberger challenges us to rethink whether weak agrofuel governance infers that biofuels must be contested or done away with altogether on the grounds that they threaten a just food system. And if a decline in biofuels were to actually occur, could it unintentionally stimulate more environmentally harmful energy extraction methods like fracking, further tar sands development, and Arctic drilling? She argues that biofuels should and could be more effectively governed. One way to do so might be to incorporate broader goals, such as those outlined in the FAO Land Tenure Guidelines,[1] rather than narrow criteria focused only on climate change mitigation and economic growth.

Ahmed sheds light on peasant agriculture's capacity to add value and enhance agricultural systems. Empirically grounded analysis show that in cyclone-prone areas of Central America, farmers who practice biodiverse agroecological practices tended to suffer less crop damage than their conventional neighbours (Ahmed, this issue; Altieri, 2009). Therefore, an effective campaign to support alternatives such as agroecology would include evoking its potential ability to assist in easing the impacts of climate change. Perhaps agroecology's more strategic contribution, which might resonate with a wider audience, is its role in helping to build new relationships, alternative values, and priorities between humans as well as nature (Snipstal, this issue).

Another strategy involves invoking the human rights framework to demand policy incentives that promote a clean and healthy environment. This is because there is already wide recognition that many human rights are dependent on our relationship with a clean, healthy, and sustainable planet. Moreover, some regional charters do in fact recognize a clean and healthy environment as a basic human right (e.g., the African Charter on Human and People's Rights[2] and the American Convention on Human Rights[3]).

[1] The full agreement is: "The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security." For more information, see: http://www.fao.org/nr/tenure/voluntary-guidelines/en/

[2] The African Charter on Human and People's Right was adopted by the African Union in 1981. For more information, visit: http://www.achpr.org/files/instruments/achpr/banjul_charter.pdf

[3] For more information on the American Convention on Human Rights, see: http://www.oas.org/dil/treaties_B-32_American_Convention_on_Human_Rights.pdf

There are concerns, however, about invoking the human rights framework. Human rights, after all, are inherently embedded in the anthropocentric and liberal paradigm. It is very much about the rights that we as one species are entitled to as opposed to being part of the wider biosphere. This is problematic considering that many global environmental disasters, including climate change, are attributed to anthropogenic activities (IPCC, 2009) and world leaders have repeatedly failed to reach agreements on human-induced climate change. The 2009 UN Climate Change Conference in Copenhagen is indicative of this inability, as are some of the world's largest polluters like the United States and Canada pulling out of the Kyoto Protocol.[4] However, there have been some responses to legally (re)define the human-centric relationship with the biosphere (see also Friedmann, this issue). For example, less than two years after the failed climate talks in Copenhagen, some 35,000 people gathered for the World People's Conference on Climate Change and the Rights of Mother Earth in Cochabamba, Bolivia. A key outcome of that meeting was the Universal Declaration of the Rights of Mother Earth— emphasizing not only strategic tools towards more ecological agriculture but also an alternative worldview and mode of being.

The Declaration recognizes Mother Earth as a living being, with which humans (and other species) have an interdependent and interrelated relationship (Cullinan, 2011). What exactly would nature's rights entail? Salon and Culinan (2010) explain that if the rights of nature were incorporated in the laws of countries, courts and tribunals would have to deal with maintaining vital ecological balances between human needs and the Earth, rather than being bogged down in technical details of permitted pollutants and emissions, such as carbon sequestration and the Clean Development Mechanism (CDM) (ibid). Essentially, instead of focusing on humans' rights to nature, the emphasis would be on the rights of nature—where nature is figured as the rights holder. For example, Bolivia has passed its Mother Earth Law, which grants nature equal rights to humans.

The global food system is at a crossroads. Socio-ecological crises arising from dominant agricultural land-use patterns and consumption are proving difficult to contain, despite various sustainability efforts to do so. Left unaddressed, these problems may fuel the potential for instability and violence—as urban food riots have already shown—as well as for greater global environmental change and the subsequent negative effects of climate change. The current food system therefore needs major rethinking to create transformative solutions that would bring about a more equitable and resilient global food system. We need to rethink the current global food system to create transformative solutions that would effectively bring about more equitable food systems that better respond to people's needs and desires while also respecting local ecosystems.

[4] The Kyoto Protocol is the world's first legally binding agreement to limit emissions of greenhouse gases.

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