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COMMENTARY

Addressing the Faustian bargain of the modern food system: connecting sustainable agriculture with sustainable consumption

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As we deal with the drivers and consequences of food price volatility that now stretch over almost a decade, the scientific, technological and environmental basis of the global food system is becoming more and more sharply contested. For the moment the agri-industrial bio-science paradigm remains in the ascendancy, notably by harnessing a neo-Malthusian call for a 'doubling' of food production by 2050 in order to feed a world of 9 billion. Here, precision agriculture, genetic engineering and nanotechnology (Beddington 2010, Gebbers and Adamchuk 2010, Scrinis and Lyons 2010, Tester and Langridge 2010) are all variously promoted as the new magic bullet for a rejuvenation of the productivist model (Horlings and Marsden 2011).

Yet, dissenting voices offering alternative visions are multiplying, and are doing so by highlighting the failings and vulnerabilities of the existing global agri-food system. At a minimum, this countervailing perspective might be expressed as: 'the current agricultural knowledge, science and technology model requires revision. Business as usual is no longer an option' (IAASTD 2009, p. 3). While its findings have been subject to systematic marginalization in mainstream agricultural science and policy circles (Feldman and Biggs 2012), the space opened by the IAASTD exercise has brought into sharper relief other critiques that highlight the need to (re-)connect agriculture to rural livelihoods, to ecological sustainability and ultimately to improved consumption.

Although some acknowledgment of the major global challenges posed by climate change, freshwater depletion and peak oil has given rise to the notion of sustainable intensification (e.g. Royal Society 2009), this arguably reflects a largely incremental, technology-driven and adaptive strand of the prevailing paradigm rather than offering a means of systematic re-structuring (Marsden 2011). While sustainable intensification is focused on ways of achieving greater agricultural productivity with reduced environmental impacts, critics even in mainstream science journals highlight the failure to develop more comprehensive – even 'revolutionary' – solutions to the multitude of sustainability challenges facing agriculture (Foley et al. 2011, Reganold et al. 2011). Moreover, while incrementalist and technology-focused innovations not only fail to address the complexity of drivers – acting singly and in

tandem – facing agriculture, they simply do not connect agriculture with the rest of the food system and especially with the sphere of consumption that appears to be regarded as off-limits.

There is now a strong case to be made to ensure that agriculture – sustainable or otherwise – is firmly located within an analysis of the wider global food system. The food system can be regarded as comprising all those activities related to the production, processing, distribution, sale, preparation and consumption of food and, as such, constitutes more than a series of 'stages' in a food chain. Rather, the entirety of the food system embraces a holistic and dynamic understanding that recognizes the complex relationships between the different components. For example, many farmers today are contracted within a highly consolidated industry to supply large volumes of low-cost food (and feed, fibre or fuel) with highly specific requirements of food processors and retailers (Reganold et al. 2011). Contract production of agri-commodities lies at the heart of the cost–price squeeze facing farmers and its attendant ecological consequences (van der Ploeg 2010), including high volumes of discard and wastage (Sage 2012a). Invariably, farming systems have been reshaped as external forces seek to exploit local circumstances to produce high-value goods for international markets. Indeed, such is the emphasis on agricultural output regardless of human need that even biofuel production, designed to enhance energy security in distant countries, can stake a superior claim to land than can the cultivation of food staples to alleviate domestic hunger.

The majority of the primary agri-foods pass through processor and retailer operations to provide a historically unprecedented abundance of cheap and convenient food choices for consumers in rich, middle-income and wealthy pockets of poor countries. Whereas some may regard this as 'one of the great success stories of humankind' (Fresco 2009), it might be better considered as a kind of Faustian bargain: the provision of cheap food while turning a blind eye to its consequences. And topping the list of its shortcomings is that 1 billion people are malnourished, more than 1 billion are over-nourished (and overweight) and health services around the world are dealing with rising levels of diet-related ill-health. A system that has successfully achieved the massification of food by focusing upon increasing volumes of throughput is far from resolving the problem of hunger – despite producing enough to feed 9 billion today – while creating a legacy of ecological disruption, landlessness and social injustice, and a burden of malnourishment and malconsumption (Sage 2012b).

Recovering sustainability within the global food system will consequently require transformative processes of change rather than incremental improvements, and they need to begin by challenging prevailing assumptions about consumers' rights to 'cheap' food and the maintenance of current dietary practices. For example, it is now well established that the low price paid by consumers for their food conceals huge externalities up and down the supply chain (Pretty et al. 2005, Carolan 2011), and one of the most problematic food

categories in this regard is livestock products. Meat and dairy consumption have achieved one of the fastest rates of growth in middle-income countries where rapid urbanization, rising household income and greater market penetration by global supermarket and food service chains are all under way. The shift from traditional staples to 'Western' style processed products (Pingali 2006) – long known as the nutrition transition (Popkin 2005) – generally features a marked increase in the consumption of animal fats, as well as sugar, salt and vegetable oils (Godfray et al. 2010). This upward trajectory in demand among some of the most populous countries explains why global meat consumption is set to double by 2050 and how, in turn, intensively reared livestock will require access to grains and oil seeds that could otherwise feed 4 billion people directly (Carolan 2011). Moreover, as meat and dairy are the most greenhouse gas intensive foods, the climate change implications are extremely significant (Garnett 2011). Unfortunately, there appears to be rather greater appetite to support bio-science solutions that seek to re-engineer the bodies of farmed animals (rumen function in cattle, low-methane sheep, the EnviropigTM) in order to reduce emissions and waste streams, than to embark upon the challenge of formulating a global strategy to lower the levels of consumption in the interests of climate stability, global justice and human health.

A sustainable food system will not be achieved only through technology-centred changes in the realm of agriculture: it will require massive strides towards securing sustainable consumption too. Fortunately, there is increasing evidence to suggest that many consumers are ready to embrace this challenge and, indeed, are already embarked upon a range of social innovations that vary enormously in their scope, function and ambition. Among the most recurrent aspirations is the desire to recover a sense of 'place' or territory and, within functionally appropriate limits, to seek to relocalize the food system. Although the notion of 'local food' has come under some critical scrutiny (Born and Purcell 2006), it nevertheless remains a powerful mobilizing device around which to challenge a system that has rendered most producers of agri-commodities as anonymous suppliers of 'food from nowhere' (Campbell 2009).

Secondly, there is currently significant effort on the part of groups of alternative consumers and self-styled food citizens to connect with 'real' farmers and explore the prospects for direct food provisioning. Sometimes referred to as 'taking back the middle', these efforts seek to address the enormous imbalances that have arisen in the modern food system dominated by a small number of powerful agri-food corporations (van der Ploeg 2008). Besides providing group members with fresh food generally produced using transparently sustainable methods, a key feature of such arrangements is the sharing of risk between farmers and members, a central principle of community-supported agriculture. A third development is the growing evidence of food planning and implementation at municipal and regional scales around the world. An extraordinary diversity of rapidly multiplying initiatives include: support for local growing (community gardens, allotments, urban agriculture); public procurement schemes, where institutions providing meals (schools,

hospitals, day care centres, prisons) replace the provision of cook-chill meals by food service companies with locally produced, often organic, ingredients prepared in local kitchens (Morgan 2008); and the creation of new stakeholder forums such as food policy councils where efforts to reshape – if not reclaim – local and regional food systems can be addressed (Morgan 2009, Marsden 2011).

In summary, then, we might suggest that the principles, methods and technologies for sustainable agriculture are fairly well established although they require further work in regard to scaling-up and to encouraging wider adoption. But one of the principal routes to this must be through harnessing the latent demand and emergent mobilization of groups and individuals to secure more sustainable and reflexively meaningful practices around food consumption. Agri-food products arguably have the potential to move us in a more sustainable direction than do other goods because they entangle every one of us as consumers not only in webs of relations with producers but also connect us to ecological processes and services, many of which are under threat (Sage 2012a). We need to reconnect our eating to such processes and can do so by highlighting the deep interconnection between sustainable agriculture and sustainable consumption. As the distinguished anthropologist Margaret Mead wrote 70 years ago: 'efforts to better the nutrition of the world simply by altered production and distribution will fall short of their goals unless corresponding and congruent changes are made in the patterns of consumption' (Mead 2008, p. 25). We would do well to heed to those words.

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