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Book Review

The Ecological Hoofprint: The Global Burden of Industrial Agriculture

Tony Weis
Zed Books, 2013: 188 pages

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When global food prices spiked upwards in 2007, the popular press explained the spike, in part, by rising demand for meat in rapidly-growing 'emerging markets' such as India and South Africa (Akram-Lodhi, 2012). Such an explanation was palpably wrong: people in rich countries consume more than three times as much meat, and more than four times as much dairy, as people in developing countries, with Americans consuming 121 kilograms of meat per person per year while South Asians and Africans consume, on average, 18 kilograms and 7 kilograms, respectively, per person per year (84). Thus, in 2010 countries with 12 per cent of the world's population consumed nearly one third of global meat consumption, while countries with a little under half the world population consumed 16 per cent of meat consumption. Moreover, in the now-classic *Diet for a Small Planet*, Francis Moore Lappé famously argued that meat production is a 'reverse protein factory': that, in 1982, "for every 16 pounds of grain and soy fed to beef cattle in the United States we only get 1 pound back in meat on our plates" (Lappé, 1991, p. 69). Those 16 pounds of grain had 21 times more calories and 8 times more protein, but only 3 times more fat, than a pound of ground beef. While other forms of livestock were relatively better in converting grain into meat, they were still inefficient ways of obtaining calories and protein, with pigs consuming 6 and chickens consuming 3 pounds of grain and soy respectively to produce 1 pound of meat. At the same time, it takes an average of 28 calories of fossil fuel energy to produce 1 calorie of meat protein for human consumption but only takes only 3.3 calories of fossil fuel energy to produce 1 calorie of protein from grain for human consumption (Pimentel & Pimentel, 2003). Thus, not only is the distribution of global meat consumption an exhibit *par excellence* of global inequality, but feeding grain to animals as a means of obtaining calories and protein is a very inefficient way of producing calories and protein.

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The great merit of Tony Weis' excellent *The Ecological Hoofprint: The Global Burden of Industrial Agriculture* is that it offers a highly readable, tightly-argued structural analysis of the contemporary world food system, predicated as it is on both inequality and inefficiency. The introduction lays out the central argument of the book: that the historically unprecedented and rapidly-expanding 'meatification' of diets is not "natural, inevitable or benign" (4) but is integral to a "dominant system of agriculture across the temperate world" in which "the biological and physical foundations of agriculture are being rapidly undermined...in ways that hinge upon the unsustainable use of non-renewable resources" (8). Aggressively challenging Malthusian tropes, Chapter 1 situates the argument within the reorganization of ecosystems by humans that has occurred during the history of human activity on the planet–the so-called 'Anthropocene'–and the more recent crisis of both biodiversity and climate change that human activity has engendered. This is explained conceptually–but not exclusively–through an approach that synthesizes John Bellamy Foster (2002) and Jason W. Moore (2011), who both argue that the systemic market imperatives of an increasingly globalized capitalist world-ecology shape the appropriation and use of resources and organize nature in order to facilitate ongoing capital accumulation. Introducing the concept of the ecological footprint as a way of articulating social inequality with environmental degradation, Weis then transposes 'hooves onto feet' (10) as a means of centering the discussion upon industrial livestock production and consumption and its implications for inequality and ecology. Chapter 2 reviews the scale, growth and inequality of meat consumption, arguing that meatification has come to be viewed as integral to capitalist modernization and a milestone of development. Tracing the outward expansion of meatification from late medieval Europe through colonial frontiers to the United States' west, Weis centrally argues that "soaring livestock production and consumption...were driven...by the economic pressure to expand the scope for capital accumulation in agriculture and food" (71). Challenging nutritional claims about meat consumption, Weis instead shows how the disposal of food surpluses in the global centers of grain production led to an increased dependence on cheap grain imports in developing countries that reconfigured agriculture, eroded production for domestic markets, and fostered a neo-liberal agricultural export bias (Akram-Lodhi & Kay, 2009, p. 320) that led to a continued "race up the animal protein ladder" (81) as high mass consumption was equated with high meat consumption.

Weis then reviews the changing contemporary uneven geography of meat. Chapter 3 begins by examining tendencies in industrial agriculture towards mechanization, standardization and simplification, which in turn produce biophysical instabilities, which are in turn overridden by industrial inputs into agriculture, which in turn but reinforce the aforementioned tendencies of industrial agriculture. Weis' specific focus is on the grain and oilseed monocultures that linearly and inefficiently feed into industrial livestock, and which are captured in one of Weis' central contributions to contemporary food studies, the concept of the industrial grain-oilseed-livestock complex. The key point here is that industrial livestock, by simultaneously magnifying monocultures and centralizing factory farms and feedlots, generate heavy "resource budgets and pollution loads...[that] converge as part of a unitary complex of production" (128). The ecological hoofprint that results is confronted in Chapter 4, as the ecological consequences, health impacts, dehumanizing employment practices and "scale and nature of violence in this system" results in ongoing meatification threatening "the very biophysical basis of agriculture" (12), a threat that cannot be resolved by the science and technology that propels incessant growth and capital accumulation. There is, Weis argues, the need for a 'de-meatification imperative' (150) which would challenge the 'commodity fetishism' around meat, "which is widely perceived

as a desirable object while little or no thought is given to the nature of its production" (154), and which would result, minimally, in greatly reduced meat consumption and far greater attention being paid to the humane and ethical treatment of animals.

Tony Weis is already extremely well-known for his (2007) *The Global Food Economy: The Battle for the Future of Farming*. That was a very good book indeed; but if anything, *The Ecological Hoofprint* is even better. In a comparatively short, thoroughly-researched and easy to read book that will appeal to students, activists, academics and concerned citizens, Weis convincingly demonstrates that global meat consumption is qualitatively different in the 21st century: that it is an outcome of a process of the capitalization of agriculture in which the accumulation imperative has significantly contributed to deepening global inequality, without regard for the nutritional or ecological implications of increased meat production and consumption, while consciously and deliberately removing from sight the extreme cruelty and violence that lies at the heart of global industrial livestock production. As Bekoff (2007) has stressed, a reduction of meat consumption by 10 per cent would result in at least 12 million more tons of grain being available for human consumption, which could feed the 60 million people around the world that starve to death each and every year. Thus, in the 21st century, the act of meat consumption is now a highly politicized act, an act whose structural foundations are laid bare in Tony Weis' remarkable *The Ecological Hoofprint: The Global Burden of Industrial Agriculture.*

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