

## Book Review

Weis, Tony. 2013. *The ecological hoofprint: the global burden of industrial livestock*. London / New York: Zed Books. 188pp. ISBN 9781780320977; paper US\$24.95.

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Without doubt, major transformations are occurring in human diets on a global scale. One of the most fundamental aspects of this is the rising consumption of animal flesh and derivatives. There exists wide consensus that industrial livestock production is a crucial driving force behind this. Influential studies report rapid growth in both animal-source-food consumption and world population. Specifically, it is expected that about one third more people and two-thirds more meat will be produced over the next four decades. Wide disparities are hidden behind this broad picture, however, with much greater consumption in rich countries. This transformation is often termed the *livestock revolution*. It is described as a transition towards improved diets, with the rising consumption of animal protein portrayed as an inevitable aspiration as individuals and societies become wealthier. Based on this, prominent actors insist that further yield enhancement is critical not only to solve present and future world food problems, but also to reduce pollution loads, extensive use of natural resources, and greenhouse gas emissions of the livestock sector. In this book, Tony Weis excels in the problematization of this narrative.

Concerns about the trajectory and unexpected effects of livestock production are beginning to penetrate among activists and scientists. However, the author claims that too often responses are framed in limited ways, centered mainly on individual ethical and welfare concerns but without connection to other struggles. This diminishes the interconnectedness of problems and their magnitude, and diverts attention away from the critical issue, that is, the *system of production* itself. The objective of the book is to draw attention to the hidden impacts that surround the increasing production and consumption of cheap animal-source food, and to stress the urgency of opposing this trajectory. Throughout the book Tony Weis makes use of multiple examples and uses information consistently to illustrate that the logic of efficiency that determines the price of cheap animal-source food turns out to be an illusion. This is because, he notes, in the end industrial livestock production is simply a technological amplification of the biological simplification inherent in any agricultural activity. Accordingly he shows that the trajectory of industrial livestock production and the rising consumption of animal-source food not only reflect global inequalities, but increase them. Capital accumulation, instead of meeting nutritional considerations or food security, seem to drive the cycling of massive quantities of grain and oilseed through animals – this characterizes industrial livestock production.

The author starts by questioning the influential assumption that global animal-source food must double by 2050. He organizes the reasoning in two main points:

- (i) the *meatification* of diets, and
- (ii) the *ecological hoofprint* of industrial livestock production.

Firstly, instead of seeing the increasing consumption of animal protein as a marker of development - nutritional transition theories suggests humans climb up the *animal protein ladder* with increasing economic development - the author employs the term *meatification* of diets to make sense the growing and highly uneven global consumption of meat. Not until the arrival of industrial livestock production did animal flesh and derivatives become central to human diets on a world scale. Weis does not see this as natural, inevitable or benign, but led by capital accumulation and influential narratives about the apparent superiority of animal protein. The author warns against the fact that if different parts of the world are perceived as located at different stages along the same trajectory, with all moving towards an advanced state, it can serve to legitimize the course itself and naturalize inherent inequalities.

Secondly, the author sheds light on the particular dynamics of the industrial grain-oilseed-livestock complex to unravel the scope of its wide-ranging environmental and social burdens, and to demystify its celebrated efficiency. The discussion centers on livestock feed. Increases in yield and output per farmer are

attained through the articulation of islands of concentrated livestock production and seas of crop monocultures, and through mechanization, standardization and biological simplification of production systems. This exacerbates a range of biophysical instabilities that are then overridden by an array of inorganic fertilizers, synthetic pesticides, irrigation, fossil-fuel-powered machines, pharmaceuticals, high-yielding seeds and animals, etc., which entail additional resource demands and pollutions loads. The high productivity and low price of industrial livestock production create a chronic ecological hoofprint (e.g. biodiversity loss, soil degradation, diminishing freshwater availability, climate change, decline in non-renewable resources, public health problems, dehumanizing work, etc.). The massive increases in volumes of feed burned in animals, triggered by gains in feed conversion, have become an additional magnifying effect. But there are insurmountable intrinsic feed conversion inefficiencies.

In a world of persistent hunger, growing livestock production is consumed disproportionately by the wealthy. The tremendous productivity per worker and high yields of feed and meat offered by industrial livestock production are thus only conceivable by ignoring many of its costs. Commodities comprise multiple socio-ecological relations that are obscured when consumers encounter them in markets. Despite the grain-oilseed-livestock complex destroying much more protein than it provides, transforming it into a *reverse protein factory*; these undervalued costs and the higher unit value of animal-source products compared with grains and oilseeds make it *profitable* to burn large volumes of usable nutrition in the metabolism of livestock.

The book is organized in four chapters. Chapter 1 describes the environmental problems posed by the growth of industrial livestock production. The author also reviews influential narratives that picture the current environmental problems as human population growth pressing up against biophysical limits. Then the author proposes the ecological footprint as a valuable pedagogical tool to examine the resource budgets and pollution loads that accompany a livestock population bomb. Chapter 2 depicts the shift of animal-source food from the periphery to the center of human diets in the last decades, the uneven *meatification* of diets and the geographical distribution of the industrial grain-oilseed-livestock complex. Root causes are the process of commodification of animal-source food, and the promise of modernization and development being linked to *meatification*. It is suggested that soaring livestock production and consumption is in essence not about better nutrition, but led by economic pressures to expand capital accumulation by means of absorbing chronic surpluses of industrial grain through fast-rising populations of concentrated animals. The uneven *meatification* of diets and the imbalanced geography of the industrial grain-oilseed-livestock complex provide a basis for understanding the asymmetrical burden of the ecological hoofprint. Chapter 3 aims at deconstructing the celebrated efficiency of industrial livestock production. The impressive productivity per worker and high yields of plants and animals are seen as a consequence of the usage of narrow metrics. The true costs of the grain-oilseed-livestock and associated biophysical instabilities are ignored. Finally, chapter 4 reviews the massive ecological hoofprint associated with industrial livestock production, in terms of land, water, atmosphere, public health, inter-species relations and the dehumanization of work. Despite the powerful momentum behind this trajectory, from corporate complexes to consumer desires and narratives about diet and development, the author claims it is far from inevitable. He concludes that to attain a more sustainable, fair and humane world, it is critical an urgent and drastic reduction in the livestock population, a deindustrialization of this production system, and a *demeatification* of diets.

Page after page, with a profusion of examples and facts and in a readable style, Tony Weis weaves a compelling storyline to reveal the feet of clay on which industrial livestock production and the current *meatification* of our diets stand. In sum, this book is a commendable intellectual exercise, didactic and scientifically sound. It is worth reading not only by scholars and students, but for anyone wishing to have a critical look on our food system.

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