Vol. 10 No. 2, pp. 123–125 July 2023

Canadian Food Studies La Revue canadienne des études sur l'alimentation

Book Review

A world without soil: The past, present, and precarious future of the earth beneath our feet

By Jo Handelsman

2021 Yale University Press: 201 pages

Reviewed by Richard S. Bloomfield*

Huron University College; ORCID: 0009-0003-8397-8513

Scholars have made a case that the study of food systems must be viewed through an interdisciplinary lens to avoid narrowly focussed solutionism. Jo Handelsman's text *A World Without Soil: The Past Present and Precarious Future of the Earth Beneath Our Feet* outlines the threats to global soil health from a scientific perspective and provides an empirical foundation for many in the social sciences or humanities who advocate for more just and sustainable food systems. While soil is often cited as important in these circles, why that is, and how exactly it functions is not as widely understood. Handelsman's effort to provide an accessible book to non-soil science specialists is admirable. Throughout the book Handelsman draws attention to a silent crisis: we are losing topsoil between up to 100 times the rate it is replenished—and if current loss rates continue, topsoil could be gone entirely within a century.

The book is arranged in ten chapters which can be grouped into three sections. In the prologue and first three chapters Handelsman outlines her personal backstory and an extensive natural history of how soil is created. In chapters four through seven she explains the types of soil challenges we face. In the final three chapters of the book, she charts tentative pathways forward relying on both ancient and modern practices alike.

In the prologue, Handelsman shares her former naiveté about the importance of soil, despite professional proximity to soil health as the Associate Director of the Office of Science and Technology Policy, in the White House. She cites the 1985 National Food Security Act,

*Corresponding author: rbloomfi@uwo.ca

DOI: 10.15353/cfs-rcea.v10i2.644
ISSN: 2292-3071

which included the implementation of the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Services (NRCS) as a solution to the soil erosion crisis at the time. However, the policy itself was subsequently eroded as soon as the early 1990s. Handelsman did not recognize how dire this situation was until late in her term, ultimately missing her most direct opportunity to influence soil protection policy.

Handelsman's summary of soils past and present is full of dense scientific terminology. As someone who is not used to engaging with polymers, geosmin (a chemical released by soil bacteria) or nitrogen-fixing bacteria rhizobia, I found myself re-reading passages of this book to gain full understanding of some of the concepts. Thankfully, many illustrations are provided throughout scientifically heavy chapters, which readers unfamiliar with soil science will find useful. Handelsman sketches the complex biodiversity of soil and highlights a societal agriculture paradox: the heightened awareness of soil which subsequently fostered its abuse. This paradox culminates in the more well-known invention, and adoption into agriculture, of the Haber-Bosch method for nitrogen fertilizer in the form of ammonium nitrate requiring fossil fuels to reach 200 degrees Celsius and intense pressure to do what micro bacteria do naturally. Although this invention created higher yielding crops, its application on lower yielding land has led to a dependence on energy intensive synthetic inputs, far beyond the natural cycles of healthy soil.

Several themes in the second section of the book will be familiar to readers advocating for food systems change, but the different soil classifications and erosion variance by region will be illuminating. Although erosion is generally well-understood as a risk to food production, Handelsman provides a corrective to the common belief that this erosion predominately takes the form of dust storms, showing instead that 80 percent of erosion is water based. In either form, however, the expansion of tillage, and the loss of plant roots to hold soil in place is the primary culprit for the loss of over one-third of American topsoil. In other regions where topsoil is thinner, like much of Africa, the threat of erosion coupled with yield plateaus should be a concern for all—particularly those who advocate for smallholder (often women) farmers who will be disproportionately affected. Interestingly, after highlighting the threats from climate change to food production—including extreme weather risks, volatilization (loss of Nitrogen), and pest control—the author invokes the COP 21 Paris Accord as a reason for hope. Sadly, many scholars have pointed to a widely acknowledged failure to seriously address the loss of biodiversity in the 2015 United Nations agreement. Perhaps the more recent COP 15 in Montreal could provide the readers with a greater sense of optimism for change at this policy-level.

In the final chapters Handelsman offers a broad set of suggestions to help abate the soil crisis. It was here that I hoped for a more adequate acknowledgment of the social, political, and cultural conditions for achieving healthier soil. While the book is a rich resource for scientific information, it makes only passing engagement with the prevailing systems which have prevented better soil stewardship to date. A good complement to Handelsman's work, therefore, might be *Thinking With Soils: Material Politics and Social Theory* by Salazar et al. Despite this shortcoming, Handelsman highlights numerous ancient Indigenous stewardship models that successfully improved and maintained the structure of soil for millennia by managing the forces that move it. The acknowledgement of Indigenous practices is a welcome inclusion; however, some of the recommendations Handelsman offers—such as carbon credit schemes supported by multinational agri-businesses like Cargill, or the defense of RoundUp Ready modified seed production—have been criticized for their role in displacing precisely the Indigenous practices she

celebrates. Handelsman rightly calls for more national policies to reverse antiquated farm insurance policies that disincentivize practices such as cover-cropping, permaculture, crop rotation, and Farmer Managed Natural Regeneration (FMNR). But she also suggests a certification scheme—"Produced by Carbon Heroes"—which is unlikely to break from the industrial food system's control since many smallholder farmers who have already done the work of so-called "Carbon Heroes" would be excluded from such a program.

This book mobilizes all to better understand what soil is, its importance, and why we must act as soon as possible to correct its decline. With the upcoming U.S. Farm Bill in 2024, and the ongoing Canadian Federal government's consultations with the agriculture sector on climate change, it is timely to think seriously about soil stewardship. This book would have been enriched by engaging more deeply with works on the social, political, and cultural milieu of soil. However, *A World Without Soil* is an accessible and useful book to any non-soil specialist who is interested in expanding their grasp of the intricacies of soil as the foundation for life and issues a compelling rallying cry for us to protect what we stand on.

Richard Bloomfield is an assistant professor in Management and Organizational Studies at Huron University College, an affiliate of Western University. His research is currently focussed on consolidation within agri-food systems, and the practises and experiences of first-generation farmers. Outside of his academic work, Richard is the co-founder of Urban Roots London, a non-profit community farm that strives to make the choice of fresh, healthy, and culturally appropriate food affordable for all.

References

Salazar, J. F., Granjou, C., Kearnes, M., Krzywoszynska, A., & Tironi, M. (Eds.). (2020). *Thinking with soils: Material politics and social theory*. Bloomsbury Publishing.