

Books & arts

soil in the long run, but nibble into profits this year. And farmers can't pay their mortgages or lease equipment with the aroma of deep black topsoil.

Handelsman and Cohen urge the world to demand real change in how mainstream agricultural production is managed. "The burden of protecting soil cannot be relegated to indigenous people and environmental activists," they note. But their specific suggestions are a little underwhelming. They join the calls for international soil treaties, but given how poorly climate treaties have worked, I am cynical about the potential of such agreements. Countries seem likely to both under-promise and under-deliver unless there are costly penalties for failure. The same goes for the consumer-facing labels that the authors propose for food produced on farms that are working to improve their soil. Similar labels have not put a meaningful dent in climate change or other environmental problems – and many customers cannot afford to spend more on "soil-friendly" food.

Top-down change

What farming needs is a top-down overhaul. Handelsman and Cohen gesture at this with proposed discounts on crop-insurance premiums for farmers who increase the carbon in their soil. More is needed. Governments must pay farmers to build soil. In the United States, farmers can apply for funding for anti-erosion improvements through the Environmental Quality Incentives Program, run by the Department of Agriculture. Funding announced this month will increase the amount of land planted with cover crops to 12 million hectares by 2030 – but even that would represent only some 7% of US cropland. It is not enough.

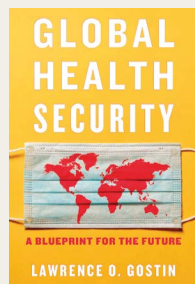
We need to change how we think of farming. We have already begun to move towards a model in which farmers are less independent businesspeople growing and selling food, and more government-supported land stewards managing a complex mix of food production, soil fertility, wildlife habitat and more. Around the world, many farmers depend on subsidies, drought relief and payments from piecemeal schemes to conserve soil and nature. Such programmes – currently small-scale, ad hoc fixes for a broken system – should be the core of the agricultural sector.

Our land, our fresh water, our biodiversity and our soil are too precious to be destroyed by the market price of commodity grains and other foodstuffs. We must invest deeply and thoughtfully in our farmers so that they can invest deeply and thoughtfully in the land, becoming holistic landscape-management professionals. This is the future of farming.

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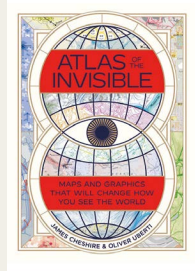
Books in brief



Global Health Security

Lawrence O. Gostin *Harvard Univ. Press* (2021)

"No one is safe from infectious diseases unless everyone is safe," says World Health Organization adviser Lawrence Gostin. Discouraged but inspired by COVID-19, his wide-ranging study analyses the science and politics of past and present global disease, with hypothetical exercises about a new influenza, bioterrorism and cholera. He recommends steps to reduce pandemic risk, such as increasing surveillance of animal pathogens and their movement. Above all, he calls for a "new politics", free from nationalistic populism.



Atlas of the Invisible

James Cheshire & Oliver Uberti *Particular* (2021)

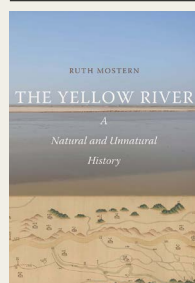
A circular map of Earth looking down on the North Pole shows 400 fibre-optic cables laid on the ocean floor between 1989 and 2020, providing access to the Internet. It is one of many maps in this intriguing, if sometimes perplexing, book by former *National Geographic* design editor Oliver Uberti and cartographer James Cheshire. They describe the volume as an "ode to the unseen": a world invisible through text and numbers alone, ranging from the development of genius to aircraft carbon dioxide emissions.



Geoengineering

Gernot Wagner *Polity* (2021)

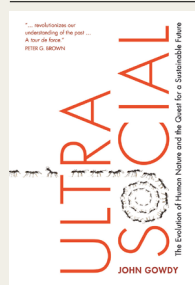
Without solar geoengineering to deal with climate change, will Earth inevitably become inhabitable? The hugely controversial, if probably inexpensive, proposal – to cool the planet by using aerosols or other methods to reflect away some of the Sun's radiation – defines economist Gernot Wagner's thought-provoking study. Two decades ago, he considered the idea "nuts". He still does, but today he advocates extensive new research and thinks we have to take the "gamble", despite the risks. The issue is now "not if, but when".



The Yellow River

Ruth Mostern *Yale Univ. Press* (2021)

China's Yellow River is "the most sediment-laden river in the world", writes environmental historian Ruth Mostern in her survey of three millennia, based on an innovative historical geographic-information system. The river's name refers to the endless yellow sediment flowing from its upper plateau; its other epithet, "China's Sorrow", evokes the frequent course changes and floods in its lower reaches. It has been subject to nearly perpetual construction and repair projects from imperial times to now, amid ongoing uncertainty.



Ultrasocial

John Gowdy *Cambridge Univ. Press* (2021)

Modern human society, like that of ants and termites, is dedicated to producing economic surplus. It is "ultrasocial", says economist John Gowdy: so "complex, stratified and interconnected" that humans seem part of a "self-regulating superorganism". To avoid climate-change catastrophe, he argues, we must live like hunter-gatherers – social in small groups, sustainable and egalitarian. But in attributing modern ills to the invention of agriculture, private property, cities and hierarchies, he oversimplifies history. **Andrew Robinson**