



FOOD SECURITY

Growing trouble

Calestous Juma assesses a call for policy to feed the world at a time of squeezed production and soaring prices.

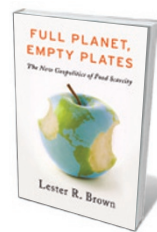
We forget that part of the impetus behind the Arab Spring was the food price spikes of 2007–8. As, globally, we continue to deal with the political and diplomatic ramifications of that, another price spike is projected — this time as a result of serious recent drought in the United States, Latin America and South Asia.

These events are key to assessing the policy relevance of environmental analyst Lester Brown's *Full Planet, Empty Plates*. Brown's message is that the deteriorating world food situation has far-reaching geopolitical ramifications that demand urgent policy action. Saving civilization, says Brown, needs to be a contact sport, "not a spectator sport".

The book offers some general indication of how that saving might happen — not least through galvanizing the international community. And it stresses the global and

systematic nature of the challenges. But the book is silent on the urgent need for an institutional response that matches the magnitude of the problem.

Brown argues that the biggest threat to global stability is the potential for food crises in developing countries. That risk is exacerbated by population growth: some 219,000 people are joining the dinner table every night. Meanwhile, the rise in affluence is driving up demand for grain-intensive livestock and poultry products — at a time when nearly



Full Planet, Empty Plates: The New Geopolitics of Food Scarcity

LESTER BROWN
W. W. Norton: 2012
160 pp. \$27.95, £20

one-third of US grain output is being diverted from food to fuel for cars. These challenges are compounded by degradation of farmlands, water scarcity, climate change and the fact that grain yields are starting to plateau.

According to Brown, the overall effect of these dynamics is a dangerous transition from a time of plenty to one of food scarcity. The result is a global rush for land, and "a new geopolitics of food". Brown avers: "Food is the new oil. Land is the new gold." Yet the newness of this thesis is overstated: food has always been a geopolitical issue. The green revolution of the 1960s and 1970s, for example, was inspired by geopolitical considerations; one being the possibility of popular uprisings following famines in countries such as India and Mexico, as was well documented by John Perkins in *Geopolitics and the Green Revolution* (Oxford University Press, 1997).

How does Brown envisage tackling the dilemmas? He asserts that conventional supply-oriented policy measures such as offering farmers financial incentives and higher price support are simply not enough. Measures of demand form the centrepiece of the book's policy response. They include stabilizing the global population, eradicating poverty, reducing meat consumption and changing biofuels policies by curtailing the growth of the industry and switching to electric vehicles.

On the face of it, Brown's proposals seem sensible. However, the book focuses on what needs to be done, but provides very little indication of how such policies might be implemented. As a result, there are few new insights on how the world can avert the "food breakdown". Although poverty eradication is a desirable goal, so far it has remained elusive, and there are no new ideas here on tackling it.

Probably the weakest aspect of *Full Planet, Empty Plates* is its failure to clearly outline the institutional mechanisms through which to address the challenge. So far, the world has tried to deal with the issue largely through international bodies such as the United Nations. Their efficacy is now in question, but there is no discussion of alternatives. And the solutions Brown cites derive from national efforts. What works for one country may not work for all.

For example, he alludes to efforts by organizations including the World Bank and the United Nations Food and Agriculture ▶



Is That a Fish in Your Ear? The Amazing Adventure of Translation

David Bellos (Particular Books, 2012; £8.99)
Culture, nationalism and semantics all feature as translator David Bellos gives both a history of the shifting meaning of translation and practical insight into the complexity it involves. (See Ellen Bialystok's review: *Nature* **477**, 536; 2011.)



The Quest: Energy, Security, and the Remaking of the Modern World

Daniel Yergin (Penguin, 2012; \$20)
Oil pools at the centre of Daniel Yergin's analysis of the challenge to supply the world with energy. Also focal is his belief that the energy question should be integral to foreign policy. (See Vaclav Smil's review: *Nature* **477**, 403; 2011.)

► Organization to work out principles for governing land acquisitions in developing countries. This has emerged as one of the most controversial aspects of African agriculture, with most of the land deals concentrated in countries such as Ethiopia, Ghana, Liberia, Madagascar, Mozambique, South Sudan and Zambia.

These are relatively poor countries that need enhanced capability in resource management. Simply offering new guidelines won't do it. Ethiopia, for example, has a long-term vision to modernize its agriculture, but Brown offers little indication of how such countries could play a part.

There have been previous predictions of food crises. A variety of creative responses — especially those made possible by advances in science and technology — helped to forestall disaster and buy the international community time. The green revolution, by introducing inputs such as fertilizer and high-yielding crop varieties, boosted food production. Brown ignores technology, however, even though almost all of the measures he proposes — from the management of population to the expansion of prosperity and switching of energy sources — require the marshalling of human ingenuity.

The green revolution offers another important insight: Latin America and Asia responded to the food crises by expanding local food-production capacity. A global network of agricultural research institutes was created under the Consultative Group on International Agricultural Research (CGIAR) to promote such capacity. The CGIAR is probably the most important geopolitical innovation ever created in response to food crises. The world will need to either strengthen it or offer an alternative.

Full Planet, Empty Plates is a call to arms against the wolf at the door. Admitting the presence of a wolf is one thing; designing an attack strategy is another. For that, we need to turn elsewhere. ■

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BIOTECHNOLOGY

Random harvest

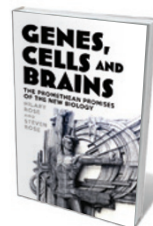
Ian Wilmut assesses a critique of how genomics, bioethics and neuroscience are meeting their potential.

The subtitle of this book — *Bioscience's Promethean Promises* — led me to expect I would be reading about the harm caused by biomedical research. Instead, I found a scathing account of the failure of recent projects in biology to provide significant new knowledge.

In *Genes, Cells and Brains*, their fifth book together, sociologist Hilary Rose and her husband, neuroscientist Steven Rose, consider in detail several disciplines that have become fashionable during the past 30 years. These include genomics, experiments on animals, biobanks, regenerative medicine and neuroscience. The duo also reviews mechanisms of evolution and informatics.

The authors introduce each theme with a historical account of its scientific, ethical and sociological background, according to their views. Anyone who has read *Love, Power and Knowledge: Towards a Feminist Transformation of the Sciences* (Polity, 1994) by Hilary Rose and *Alas Poor Darwin: Arguments Against Evolutionary Psychology* (Jonathan Cape, 2000), edited by both authors, will know broadly what to expect from their socialist and feminist perspectives. So there is criticism of modern academics being encouraged to patent their research or becoming involved in commercializing their work, and of pre-implantation genetic diagnosis. Whether or not you agree with the Roses' perspectives, they provide thought-provoking and interesting contrasts to the secular, neo-liberal view that predominates at present.

The authors describe why, in many cases, they believe that misunderstandings about the underlying biology inevitably led to projects failing to achieve their aims. In their view, for example, the gene-centric view of biology exaggerates the probability of finding linkages between genes and



Genes, Cells and Brains: Bioscience's Promethean Promises

HILARY ROSE AND
STEVEN ROSE
Verso: 2012. 336 pp.
£20, \$26.95

disease. They also forcefully criticize today's free-market capitalist global economy, suggesting that the undesirable social environment it creates often leads to inappropriate organization of bioscience projects, with, for example, serious risks of personal data being released into the public domain.

They address their criticisms particularly at the genome-wide association studies of human inherited disease that have sprung up since the human genome was first sequenced. In such studies, the genomes of populations in a community are analysed in a search for evidence that a specific form of a gene (allele) is associated with a high risk of the person having a serious illness. So far, these projects have failed to fulfil the unrealistic expectations that were raised by publicity from the research community.



But Will the Planet Notice? How Smart Economics Can Save the World

Gernot Wagner (Hill and Wang, 2012; \$16)

You can avoid meat, plastic bags and air miles, writes economist Gernot Wagner, but individual choices have no effect on the planet. Harnessing market forces to incentivize green behaviour is the key to confronting climate chaos, he argues.



Alone Together: Why We Expect More from Technology and Less from Each Other

Sherry Turkle (Basic Books, 2012; \$16.99)

Computers are changing the way we interact, warns social scientist Sherry Turkle, leading us to view digital connections as a substitute for intimacy. Many people are 'always online'; others have never known life without computers.