

Biel, Robert. 2016. *Sustainable food systems: the role of the city*. London: UCL Press. ISBN: 978-1-911307-09-9; free online, hard copy £10.00.

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Robert Biel's fascinating book on this topic is a breath of fresh air, taking, as it does, a strong and convincing political ecology argument into conversation with more scientific debates around food security in a way which manages to be both critical and constructive at the same time. The subtitle is perhaps slightly misleading given that urban agriculture specifically doesn't become a significant focus for the book until the penultimate chapter. Nonetheless, the book's main contribution – to argue for a closer connection between Marxist thought and the principles behind what we might term 'alternative' approaches to food growing (for example, the organics movement, permaculture, agroecology) – is both important and timely.

In the introduction, Biel emphasises that "I approach this topic as a food-growing practitioner and allotment holder: the allotment movement and its working-class traditions of self-organisation continue to inspire me." (p.1). A few paragraphs later, he also signals his intention to engage constructively with the FAO's new focus on 'sustainable intensification' "rather than merely critiquing its 'discourse'." Both these comments struck a chord with me. Like Biel, I am a social scientist teaching and researching in an interdisciplinary research environment where I want to have a 'constructive engagement' with the plant and soil scientists surrounding me. Like Biel, I am also a practitioner: I have an allotment and help to run a community garden and try to get involved in local food activism where I have chance. I have also been very inspired by the ecology and philosophy of permaculture and agroecology as, evidently, has Biel. And, like Biel, I have frequently wondered why many of the supposed 'alternative' and low-impact forms of growing currently being promoted for environmental reasons – with permaculture and the organics movement being two prime examples – have so little to say about the radical social and political change that is required if we are ever to achieve anything remotely resembling a sustainable food system.

It was therefore very welcome to read a book which addresses this issue head on. The book's key aim is to bring the more environmentalist/ecological arguments supporting permaculture and other 'alternative'/low impact cultivation systems closer to the social science, Marxist arguments more familiar to political ecologists. Biel takes as his starting point the Marxist argument that the logic of capital accumulation is destructive to both worker interests and the natural world. The consequences of this are clearly visible today in the economic and social hardships facing small and medium sized farmers all over the world as well as the large scale environmental destruction caused by many industrial farming practices. Biel also reminds us of what he describes as the 'paradox of 'innovation' which we see under contemporary agrarian capitalism, i.e., the ways in which many of the apparent 'novelties' being proposed as solutions to these problems (GMOs, biotech innovations and more sophisticated agrochemical formulations to name just a few) actually just result in a deepening of the farming system's dependency on capitalism, alienating us further from nature and exacerbating the social inequalities that result. However, also following Marxist arguments, he points to current struggles emerging around agriculture, including the global food sovereignty movement and a growing interest in various forms of 'alternative' agriculture, as necessary conflicts which signal that the process of generating a fairer and more ecologically sustainable farming system are underway.

These arguments may already be very familiar to political ecologists. However, what makes this book really special and different is the way in which Biel then links these social and political arguments to innovative thinking in science and ecology. Starting with an introduction to systems theory, he explores the way in which many of the 'alternative' farming methods currently gaining credence across the world, such as permaculture, agroecology and organics have an emphasis on the farmer working *with* complex natural systems and holistic processes, rather than trying to simplify and control them. For example, a 'no dig' cultivation system is based on building up the soil's natural ecosystem – including extensive networks of mycorrhizae, fungi, bacteria and other organisms – to better support the plants being grown. Biel explains that contemporary soil science and ecology is now starting to really appreciate the complex interactions taking place below the ground, and argues that this presents a complete challenge to the reductionist scientific paradigm which has held sway for many years, whereby 'understanding' something was thought to

be all about 'isolating' and 'controlling' the effect of one particular factor within a system. And here comes the crucial part: Biel argues that industrial farming systems which are based upon simplification and control of nature (the eradication of weeds, the reduction of plant nutrition to a few key chemical elements) are also easier systems to control socially and politically, precisely because they involve a reduction in diversity and mastery over a few key inputs. Contrast this to a low/no input, holistic system in which nature does the work and the farmer uses his/her knowledge to work with the complexity of the ecosystem, and we can start to see how this might be beneficial for farmers as well as the environment.

Again, however, it is crucial to think about the social and political dimensions of such a system. While the growing interest in more ecologically friendly farming methods has been welcomed broadly, social scientists have rightly pointed to the danger of such approaches being 'co-opted' by business-as-usual capitalist interests. Here, too, Biel has an important contribution to make. Reminding us that it isn't sufficient to think about agroecology solely as a new mode of production, he explains that:

...a knowledge-intensive, low-work system implies empowerment, a redistribution of power away from corporate intellectual property, and liberation from the dominance of global value chains. If these conditions are absent, the switch to small farms, which should in principle be progressive, could actually be just another form of exploitation. (p.86)

And again on p. 112:

...it is vital to establish a line of demarcation from co-optive strategies of neo-liberalism. Where the latter embraces themes of 'community', resilience, etc. in order to drag them away from radical class politics, we should assert that it is actually only *through* radical forces that we can arrive at a future where society and nature work on common principles. Concretely, we aim to situate organics within a *socially critical* approach to general systems theory.

To summarise, then, I found this to an extremely useful book. It is based on a strong grasp of social theory (in addition to Marx, we meet Foucault, Gramsci and Freire) but is also decidedly interdisciplinary in outlook, thanks to the aforementioned engagement with soil science, ecology and systems theory. It is a short book and this, combined with the breadth of material covered, limits the amount of detail that is possible on any of the topics covered. However, as an introduction to the research landscape it is really excellent and would make a great resource for Masters students interested in food and agriculture – whether from social or natural science backgrounds.

Importantly – and very much in keeping with the arguments made about sharing of farming knowledge within the book – it is also open access (as is this review) and forms part of a series of 14 such titles (currently) by UCL Press. It can be [downloaded for free](#) or a paperback copy can be purchased for just £10.

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