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Preamble

I should start on a personal note to contextualise my own experience on the contested battlefield of “food security”. My academic career segued from evolutionary and population ecology into agricultural ecology, which was my prime focus before becoming the lead of the UK’s Global Food Security programme 5 years ago. This programme is a partnership of the UK’s public bodies with an interest in food and food security (government departments – in the UK, Scottish and Welsh governments – and research councils). Our job has been to look at the food challenge “in the round”, undertake horizon scanning, identify key areas of knowledge deficit and try and put in place research to address them. I have worked with the EU as well as UK governments, and been involved in G8 and G20 initiatives around food, as well as working with industry and civil society. It has been a privilege, coming from a “hard science” background to be exposed to, and learn from, the breadth of academic fields that necessarily contribute to developing an understanding of the food system in local and global contexts. The word “necessarily” is the operational one there: to tackle food security we need to understand the “big picture”; simply sitting in our disciplinary silos, studying in ever greater detail the image on our piece of the jigsaw, is not sufficient.

Food security is confusingly multi-faceted

Food security occurs when all people, all of the time, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. As everyone appreciates, many people around the world do not get access to diets that allow them to have a healthy life. The traditional focus of concern has been the poor, largely in the developing world, where getting sufficient food is a daily struggle. According to official statistics, there are about 795 million who are chronically hungry in the developing world now; 165 million children are stunted and will carry the burden of this through their lives. Furthermore, 2 billion individuals suffer from “hidden hunger” and are malnourished through deficiencies in iron or other micronutrients (vitamins, minerals, trace elements). Nutritious food is more than calories. For billions of people, the problems of gaining adequate nutrition and calories are primarily due to lack of access to food; mostly due to poverty. Lack of access to food, beyond its public health impacts,
can destabilise civil society especially in periods of rapid food price inflation\(^8\), and drive changing patterns of human migration, including transnationally\(^9\).

Whilst the developing world has historically been the focus of food security studies (and interventions), food insecurity in the developed world is increasingly apparent. Growing income inequality leads to ever more people struggling to feed themselves or their families. This notion of “food poverty” is exemplified by the growth of emergency food aid. In the UK, for example, in 2015-16, the Trussell Trust distributed over 1.1 million parcels of 3-day food aid\(^10\), an 18-fold increase over the handouts given in 2010-11. Malnutrition – literally “bad nourishment” – is not just a problem of under-consumption: more than a third of all adults are overweight or obese\(^11\); leading to personal, public-health and environmental costs. Given that there are strong associations between poverty and obesity prevalence in many countries (e.g. [1]), obesity-related ill-health can be seen as a manifestation of food insecurity: the poorest in the rich world cannot access nutritious food that provides for a healthy life rather exist on “empty calories”. Today, more people globally are obese than underweight, and just under 50% of the world’s population can now be described as “normal” weight [2]. On average, therefore, our food system is not providing food for a healthy life.

The food price spikes of 2007/8 and 2010/11 created a global shock and brought to the fore recognition that food matters in many ways, to many people. It matters because – perhaps with the exception of North Korea – every country is affected by the global market for food commodities and if there is a production shortfall the market consequences can reverberate round the world [3]; a risk that is only likely to get worse with climate change\(^12\). In every country, the poorest suffered and traded down in quality or bought less. Furthermore, as so graphically expounded by Sir John Beddington, then the UK Government’s Chief Science Advisor, the food crisis highlighted that there was a “perfect storm” brewing. Driven by population and economic growth, demand for food, water and energy is growing; but at the same time, supply growth will be constrained by climate change and competition for resources.

The predominant rhetoric in food security following the price spikes was “to meet demand trends, the world needs to produce 60% more food”\(^13\). Buying into this argument led to governments reinvigorating investments in agriculture to increase yields. This included renewed investment in biotechnological approaches. Neither response was entirely disinterested and pro-poor: greater production can lead to greater exports for producer-countries; and in the world of biotechnology, intellectual property rights in gene technology was a revenue stream for rich-world economies. Responding to “the perfect storm argument”, the environmental community highlighted the environmental externalities of food production – in terms of biodiversity loss, water quality, habitat loss, greenhouse gas emissions. Combining these two led to the optimistic (and contested) notion of

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\(^10\) https://www.trusselltrust.org/news-and-blog/latest-stats/


\(^13\) www.fao.org/docrep/016/ap106e/ap106e.pdf
"sustainable intensification": if we have to grow more to meet demand, we have to minimise environmental effects.

Over the last few years, however, people have been increasingly recognising the scale of problematic demand-side issues. These include waste, ill-health and inefficient use of agricultural products. Recent analysis indicates that agri-food alone, within a couple of decades, will emit greenhouse gasses equivalent to the entire remaining carbon-budget allowable under the Paris agreement to limit climate change. This has emphasised that our global food system cannot continue as it is: if demand is met, more food will be wasted, more people will be obese, more people will suffer environmental degradation, more people may suffer from inequality in food distribution and we’ll lock ourselves into evermore accelerating climate change. It is becoming more evident by the day that we need a global, systemic transformation of the food system towards one that delivers low-waste and healthy, sustainable consumption – whether for the rich or poor.

So where are we? Food insecurity is deeply embedded, with different symptoms, in the rich and poor worlds; and malnourishment (of the under and overweight) poor often sits side by side with profligate waste.

Within the prevailing, neo-liberal, market-solves-all-problems paradigm, food security as a goal is often interpreted – by governments and scientists alike – as a requirement to maximise yields and connect production to the global market. Many of my colleagues in science and policy take this almost as a matter of faith. However, this view is deeply contested; as David Nally says: “To put this ... more forcefully: what today is commonly called “food security” is perhaps better seen as a way of subjugating the poor under the pretence of doing them good” [4].

To judge between these different world views is difficult for a number of reasons. Firstly, the breadth of academic expertise required to become familiar with (let alone be an expert in) the multi-faceted workings of the food system and its impacts on people and the planet is huge. To an agriculturalist, it is self-evident that the solution to malnourishment is production; a development-studies person working in the field may cite land tenure, or infrastructural deficiencies; a political scientist may cite the politics of nation states and how they interact with the WTO and World Bank; an economist may cite subsidies and incentives and access to international markets; a sociologist may cite cultural norms in the way food is accessed in the family and the food environment and so on.

Secondly, whilst each discipline may have a solution, there is rather little attempt to join up the disciplines to find the true leverage points for intervention. The food security literature in the rich countries (food poverty, food deserts, obesity and poverty etc) is largely divorced from the literature of food security in the poorest countries. Sometime hubris also gets in the way: I have heard many times that “genetic engineering is the solution, so we have to educate people to accept it”, without proper analysis how this may undermine food security by entrenching power-relationships and moving profits from lower income countries to the wealthier global north. We need to grasp these nettles and analyse disciplinary perspectives from an understanding of the inter- and trans-disciplinary nature of the problems; and so we need books to guide our learning.

The books in overview
That may be the longest introduction in the history of a review without actually getting to the books being reviewed! However, given the many contrasting faces of “food security” it is important to place individual jigsaw pieces into the “big picture” to make progress on the core problem. And the core problem is that our global food system is not sustainable and not equitable. The four books cover much ground, from a book on food security from multiple perspectives [5], via food governance [6] and food politics [7] to food justice [8]

Naylor [5] is an edited volume, based in part on Rosamond Naylor’s long history of work at Stanford’s Center on Food Security and the Environment called “The evolving sphere of food security”, with every chapter being authored by someone associated with Stanford. According to the introduction; there are two distinguishing themes about the book. The first is that it recognises that food security is related to the whole gamut of other securities: water, health, environment, energy and national. The second is that it recognises the globalised world, and that events in one place (whether policy or weather) have important impacts on the other places through the global food system. Whilst its focus is typically on the traditional manifestation of food insecurity (i.e. hunger and undernourishment), it nonetheless succeeds in its aims of not excising food from the nexus and highlighting the spatial interconnectedness of cause-and-effect. It is an interesting collection of chapters from a wide range of perspectives, all of them felt like they were saying some new things (or in other words, I learned something from each chapter, even the areas I am most familiar with). The “freshness” came because significant efforts were made to connect food to water, energy, environment and recognise the “interconnectedness of all things”.

Many of the chapters in The Evolving Sphere of Food Security [5], like the other books, analyse why the food system is not delivering sustainable food security. Cuéllar et al analyse US food and ag. Policy; and Jo Swinnen does the same for the EU’s CAP and food policies: both identify that food policies are made on the basis of domestic interests, to further domestic aims, even if ultimately this is negative for the global poor. Burney and Lobell et al. addresses the inter-connectedness of energy and food. Burney highlights the issue that access to water requires energy for pumping, and that therefore the most food-insecure people (at macro and micro-levels) have the world’s lowest energy consumption. These people are also the most vulnerable to changing weather created by the rich world’s high energy usage. Lobell et al. discuss that rich world biofuels policy can contribute to food price spikes. These can then affect import-dependent sub-Saharan African (SSA) countries disproportionately. As pointed out several times in these books (most extensively in [6]), import dependent SSA countries often developed their import-dependence due to conditions imposed upon them by the rich world in return for finance or trade. Rueda and Lambin examine land-use change on a global basis and show that recent global expansion of agricultural area is not “for” food security but is rather more about feeding the demands of the rich world: growing more coffee, cocoa, sugar, oil and meat to feed the western diet. In addition, there was a range of studies which were focussed on case studies (from Indonesia’s economic development and its multi-decadal reduction of food insecurity, to water-use in Mexico).

McKeon [6] is a single-authored book about food governance. Its subtitle is “empowering communities, regulating corporations” which is a fair reflection of the conclusions. Nora McKeon is a historian turned political scientist, who has spent most of her career at the Food and Agriculture Organization (FAO) of the United Nations. She ended her time with responsibility for the overall direction of the FAO’s relations with civil society.
Being a single person’s thesis, it is not surprising that it the most synthetic book of the quartet. It is also perhaps the most comprehensive critique of the food system. It directly addresses power relationships, both in terms of analysis of why the system is as it is, how it works, and how it could change for the better. Throughout the book three questions about power are embedded: “who wields it, to what effect and to whose benefit”. The first half of the book, in essence, analyses the current system and its flaws; the second half focuses on ways it could change (and identifies some emerging routes for change). The first chapter is an eye-opening look at the development of global governance over the last 60 years. National governments have badly balanced “long-term public collective goals and short-term particular national or private interests” (p14), a view which resonates with the policy analyses of US and EU agri-food policy in [5]. Indeed, the first FAO Director, Boyd-Orr, resigned because the UK and US “were not prepared to give either funds or authority to an organisation over which they had not got full control. Britain might have lost her advantage of cheap food imports, whereas the US thought she could do better for herself as a world power through bilateral aid” (p14). The final decades of the 20th century saw the development of what McKeon calls the “Corporate Food Regime”. This is characterised by a world of liberal trade, that essentially couples northern grain production to southern fruit, vegetable and seafood production, coordinated by trans-national corporations, with the rules set by international finance (such as the world bank, as well as private institutions) and the World Trade Organisation. With stringent intellectual property rights, the mergers of corporations into few centres of power, the efficient concentration of production into fewer areas of “comparative advantage” and global sets of standards, this food regime has created a “world farm”. The downside of this is that producers who cannot comply with certification schemes or compete on the global market face greater insecurity. In this way, the corporate food regime may undermine access to food for the poorest and most vulnerable.

There is much to ponder in McKeon’s book. The key thesis is that globalisation and the neo-liberal free-market is why our global food system is so dysfunctional. As an example of why this is so, take the example of “large scale land acquisitions” (or “land-grabbing”). In SSA, following independence many new states nationalised communal land; and, especially where customary land-tenure is weak, governments can raise income by leasing the national land. This is often for the benefit of the international market (to supply richer rather than poorer nations). Furthermore, as populations expand, people are constrained from expanding on to the nationally-owned land. The end result is that, as populations grow in SSA, land is passed down in ever smaller parcels (this is also discussed by Smith & Naylor in [5]), creating a vicious circle of impoverishment and food insecurity.

There is an interesting discussion of framing assumptions and the role of evidence in evidence-based policy making; which echoes an assessment that “value-chain thinking” is often problematic because it values the wrong things. Entry to international markets ends up adding monetary value to produce; but drives the costs to be externalised to maximise profits, and thus profits move “up the chain” leaving costs behind. In contrast, local food webs keep both costs and benefits internal to society and therefore tend to be more sustainable. If value chains valued the externalities, it would be one thing; but as they only put a monetary value of the produce, the “evidence” then looks like it is socially beneficial – but the framing assumptions exclude evidence to the contrary. This argument echoes one in Herring’s introduction (p26): “Food politics lacks not only the honest broker that can provide a factual check on ethical reasoning, but also even agreement on the methods for getting there”. 
Dieterle [8] “Just Food” is an edited volume of essays about food justice, with all the authors from the US (except one, based in Canada). This covers ground from the philosophy of property rights to chapters on “alimentary identities” and how meat eating is promoted as a masculine issue, as well as an analysis of gendered eating habits in movies.

Not surprisingly, the chapters in Just food have, as a focus, food injustice – and there is lots of it about. The perspective is largely North-and-South American; and some chapters are theoretical, others not. There are many interesting chapters here. Is it morally right that in a rich world some accumulate vast wealth whereas others are starving? (no). Is sustainable production necessary for food justice? (in short, yes, according to Scoville). Are food deserts unjust? (Yes, according to Dieterle: “My primary thesis is that even someone committed to libertarian principles and a Lockean theory of property has reason to support limitation in property rights to address...food deserts” p 49).

Tammelleo focuses on the unjust consequences of NAFTA – by removing trade barriers but allowing US farm subsidies to remain - on Mexican farm income and employment, coupled with tougher US Immigration policies at the border leading to more peasants dying as they attempted to cross to escape poverty. Two chapters focus on food sovereignty and the ability for peoples to control their own food and agricultural systems. In essence, argues Navin, the typical interpretation of the global food security agenda as pro-productionist implicitly encourages westernised agricultural methods and connection to the global market. This is therefore inherently in tension with food sovereignty. One chapter, by Nancy Snow, asks “can we make virtuous food choices?” and emphasises the benefits of so doing for personal wellbeing – beyond nutrition. She calls it “food flourishing” when one makes “food choices that respect and preserve” both sustenance and sustainability. Making the right choices in food – being a political consumer – might be, in essence, a driver for food system transformation (about which more later), but as someone who attempts to measure sustainability in agriculture, I speak with personal conviction that it is often impossible to assess what the “right decision” may be.

The meatiest volume is the massive volume edited by Herring [7] “The Oxford Handbook of food, politics and society”. This is a book of 35 shortish essays, but, in its entirety, it is about 550,000 words (1.7kg) – so not a book for sitting down and reading cover to cover. Although it is arranged into 5 parts (Production; Normative Knowledge; Nature; Food Values and Global meets Local) this structure is somewhat undermined by thematic overlap. For example, biotechnology is a favourite theme. It appears as a conventional overview of genetic modification (GM) technology by Newell-McGloughlin in Production; a polemic on the benefits of biotechnology in Nature by McHughen – which seems so flawed in its understanding of environmental issues that it shouldn’t really have a home in an academic publication. The part about Food Values feels dominated by GM: there is a cross-country examination of attitudes to GM by Sato; a chapter by Chassy is titled “Food Safety” but the content is not about food safety, rather it is about the safety of eating GM crops; there is an essay on biotechnology regulation by Graff et al; as well as a chapter about how GM can live side-by-side with organic agriculture by Thies. Even in the part Global meets Local there is a case study on GM Papaya by Evanega and Lynas (a pro-GM activist). Many of 35 essays are interesting, but, it feels to me, many – though not all - sit, within a framing of the food security that is rather narrow and uncritical of the productionist, techno-optimistic, neo-liberal agenda. Each essay, also, is a stand-alone, largely disciplinary contribution; and there is relatively little attempt at synthesis (outside the introductory chapter by Herring).
Furthermore, issues that I think are pivotal in the politics of food are not given the weight they deserve. For example, climate change and its impact on food systems and food security is largely dismissed in 3 pages in one chapter by Watson. His argument firstly hints that climate change is not much to worry about as large impacts cited by others are due to the “selection of unlikely outcomes” (p455) and “only the worst predictions have dire consequences before 2050” (p456) and predictions “gloss over a great deal of variance and uncertainty”. Given all this, incremental investment by governments in agriculture will boost farmers’ incomes more than the impact of climate change. “The worse you believe the effects of climate change will be, the more valuable it will be for ...actors to invest in sustainable agricultural growth and poverty reduction” (p453). Unless they don’t; or if adapting to increasingly severe events is not possible or too expensive, of course... The treatment of climate change is much better covered in Lobell et al.’s chapter in [5].

**Big picture message: the global food system is dysfunctional.**

There is a strong commonality across these books that our food system is flawed. Dieterle, in her introduction, lists some reasons whilst defining the scope of the book: “The phrase “food justice” is often invoked to highlight a range of ethical issues concerning food, including...the rights of agricultural labourers; iniquities in food distribution within nations and between them; increased obesity rates among the poor, and lack of access to healthy nutritious foods...; the corporatization of the food system; the unsustainable nature of our current methods of food production; and the lack of democratic control over how food is grown, harvested and distributed” (p ix in [8]). Similar sentiments come from McKeon: “now is the time to focus on food governance not only because we are getting close to the absolute ecological, socio-economic and political limits of today’s unsustainable and inequitable food system, but because there are alternatives out there” (p6). “Food governance has become an intricate web of often overlapping or contradictory formal policies...regulatory responsibilities are being shifted from the public to the very private sector interests, who profit from the rules they put in place. The outcome is not subject to adequate political oversight. The market is taken to be a neutral and efficient arbitrator despite overwhelming evidence to the contrary. The global food system is largely orchestrated by corporate, financial and powerful political actors to reflect their interests” ([6] p 3). These sorts of comments are echoed again and again throughout these books.

Overall, it is difficult, in reading these books not to feel we’ve rather passively accepted the design of the system that doesn’t work for many people. In McKeon’s view: “[i]t ought to be self-evident that a system whose motor is the quest for profits for shareholders and speculators cannot be entrusted with promoting the common good in a world in which inequalities and unsustainable practices of all sorts are as pronounced as they are in ours” (p57).

**Is there hope?**

For many happy consumers, the food system works, and people do celebrate its success over recent decades in producing so much more food with relatively little extra land. Across these books there is also embedded optimism. This optimism may be in technology and neo-liberalism, as many chapters in [7] indicate. For example, “In basic economics, increasing the supply of any commodity will lead to a decrease in price. So using biotechnology to increase food production will lead to a reduced cost to consumers...[A] reduction in food cost will enable [impoverished people] to purchase more and better
food with their limited money. And we can achieve this without taking excess wealth away from rich people...” (McHughen, p449 in Herring [7]).

Beyond techno-optimism, there is acknowledgement that there are ways we can intervene to increase food justice, equality, security, sovereignty and sustainability. The thrust of the second half of McKeon’s book is that there is scope for transformation through emerging new markets, which are bottom-up, civil-society led; if they are supported by better food system governance, we could end up with more sustainable food systems. “It is an issue of what needs to happen at what level to build a better food system...[t]he answer is straightforward. Initiatives are rooted in local communities and need to be able to count on support from higher levels. Instead, international and regional levels are now the sources of policies that restrict national and local choice by imposing trade regulations, investment agreements and intellectual property regimes” (p114).

Stedman (in Naylor), who chaired the UN’s High Level Panel on Threats, Challenges and Change, and has been an important force in international security and how the UN approaches it, contributes an interesting chapter on food in a security context; and the tension, mentioned several times above between national security (especially of the rich) and international security. He suggests the possibility of a “bargain” between the G20 and food-insecure countries and lays out some conditions it would need. He concludes: “the likelihood of such a bargain depends on rich, powerful countries accepting they can be food secure in ways that do not diminish the food security of others. It also requires food-insecure countries to exercise their sovereignty in ways that …provide food security for their own citizens. Arguments that tie food security to international security can create a framework and rationale for such a bargain” (p306).

For any nation, state authority is founded on protecting national interests. The externalities created by our food system are widespread: poor public health, climate change, environmental damage and the potential for the system to drive destabilisation through reducing food security elsewhere. States are not protecting their national interests if they see “business as usual” for our current food system as an attractive pathway.

And finally...

The UK radio programme “Desert Island Discs” interviews celebrities about their choice of music and reading if they were cast-away on a desert island; a choice of one book is allowed.

If I was to pick one book from these four (primarily to recommend to my food security colleagues, many of which are embedded within the predominant “productivist paradigm”), it would be McKeon’s. Producing ever more and having faith in technology and market is not going to solve the challenges, rather compound them. This book ought to be essential reading on any course about food security.

Herring’s Handbook is the book I found least stimulating (which may reflect that many of the essays put forward arguments that are more familiar to someone of my background). For me, it felt too acritical of the negative externalities of McKeon’s “paradigm of productivism”; and often too accepting of the premise that criticism of our current system is misplaced. Additionally, because the chapters were independent, where criticism of the prevailing paradigm appears (e.g. the chapter on
the value of wild food), there was no guidance how to balance the conflicting views. In addition, if this was your Castaway’s choice, you’d sink before you got it to shore.