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Book Review

Cities and Agriculture: Developing Resilient Urban Food Systems

Henk de Zeeuw and Pay Drechsel (Eds.)
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Reviewed by: Zhenzhong Si, Jennifer Marshman, Simon Berge, Ning Dai, Tammara Soma, Bryan Dale, Karen Landman, John Bacher, Mashiur Rahman, Charles Z. Levkoe

Introduction

In an age when we are inundated with information, efforts that streamline that information—by sifting kernels of wheat from the chaff—are precious. Our reviews are intended to assist CFS readers faced with a growing body of material relevant to food studies. However, the standard book review process is ill-suited to the increasingly common edited volume, with large numbers of chapters written by multiple authors. A single review struggles to capture and reflect on the distinct themes and copious information that such volumes typically contain.

We are experimenting with alternative formats. This installment was initially conceived as a "community book review", where we sought reviewers with relevant experience to tackle the material in each of the chapters. Ten volunteers stepped forward, and even participated in a round of blind reviews of each other's work. The result is a collaborative effort that provides depth of analysis for each of the 15 chapters in this book, and some lightly ground grains of wheat for your digestion.

-Phil Mount, Associate Editor

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Chapter 1 — Urban Food Systems

Johannes S. C. Wiskerke

Review by Zhenzhong Si (University of Waterloo, Department of Geography and Environmental Management)

In the opening chapter of the book, Johannes Wiskerke provides a comprehensive and clearly-structured elaboration on the conditions that shape our food systems, as well as guiding principles for designing resilient urban food systems. Wiskerke insightfully points out the neglect of food on the urban agenda, and calls for a better understanding of food as a critical urban issue. For example, food provisioning and consumption in cities can significantly affect the economic viability, environmental sustainability, public health, and quality of communities. The author devotes most of the chapter to the discussion of four major themes, which are also conditions shaping the food system: population growth, urbanization and changing diets; scarcity and depletion of resources; public health; and climate change. He then summarizes four guiding principles that will comprehensively address these conditions—adopting a city region perspective; connecting flows; creating synergies; and planning for resilient urban food systems.

The strength of the chapter is the integration of multiple issues, ideas, arguments and cases that create an overview of the urban food system, addressing theoretical and empirical themes. However, while adopting a city region perspective is crucial, the capacity of city level governments to redesign urban food systems should not be perceived as universal or equal, given that the administrative power structure varies in different places. The critiques of local food systems in agri-food studies, particularly the social justice dimension, deserve more attention in the depiction of urban agriculture's role in fostering urban development goals. Wiskerke offers a key takeaway message for readers: as a nexus that connects various urban policy domains and sustainability goals, the urban food system demands novel policies, urban planning, and governance agencies that aim to connect flows in waste management, and that create synergies by developing multifunctional urban food projects.

Chapter 2 — Urban Food Policies and Programs: An Overview

Lauren Baker and Henk de Zeeuw

Review by Jennifer Marshman (Wilfrid Laurier University, Centre for Sustainable Food Systems)

Before refrigeration and motorized transportation, cities were inextricably tied to food production. Proximity to the point of consumption meant a reduction in travel time and spoilage. As industrialization and global trade grew, urban ties to agricultural interests weakened and global food markets dominated, increasing the distance between producers and consumers. It is

increasingly evident to municipalities in both developed and developing countries that this global food system is linked to some of the most pressing urban issues today: “urban food insecurity, hunger, the increase of diet-related chronic diseases, the growing dependency on … large scale supermarket chains, and the growing vulnerability of the urban food system” (p. 26).

Authors Baker, a policy specialist with the Toronto Food Policy Council, and de Zeeuw, a senior advisor in agricultural development and founding director of RUAF, are perfectly situated to provide an in-depth analysis of policy development in this area. While a comprehensive review of all policies and programs across the globe would be impossible, Baker and de Zeeuw have compiled a number of the most relevant, recent inventories of policies and programs of urban food systems from the United States, Canada, and Europe. This, combined with a review of several broad publications from the work happening in developing countries, led them to identify four main objectives that focus on the social, health-related, economic, and ecological dimensions of urban
food policies.

What follows is organized using these four objectives as guides to navigate through specific examples from cities around the world. For anyone with an interest in urban agriculture policy and/or advocacy, the following eighteen pages provide excellent entry points for an ongoing exploration of these issues. Through the examples, it is evident that policies are beginning to move away from a micro level organization (individual and community) towards a more meso level of adoption (community, municipal, and regional). To ensure ongoing growth and effective governance in this urban food policy arena requires strengthened linkages across levels of government and a move towards macro level integration and incentivization of municipal food policy development. The authors point to the next chapter for a discussion of what good governance in this area would look like. They call for better measurements of the real costs and impacts of urban agriculture in order to justify investments in this area.
The authors have largely and successfully introduced examples of global policies and programs which address the urban issues that motivated this review.

Chapter 3 — Process and Tools for Multi-Stakeholder Planning of the Urban Agro-Food System

Henk de Zeeuw and Marielle Dubbeling

Review by Simon Berge (University of Winnipeg, Business Chair of Cooperative Enterprises)

This chapter presents experiences gained in multi-stakeholder planning of agro-food systems for communities, cities, or regions of the global North and South. Three planning approaches are presented: 1) policy vs. action, 2) top-down vs. bottom-up, and 3) mainstream vs. alternative. The authors then present a process for planning local/city-region agro-food systems, suggesting

that any such process is non-linear. The authors indicate that these chaotic processes require planning that fits the specific local/city-region, outlining five phases of planning: 1) getting started; 2) assessment of the current agro-food system in the city region; 3) multi-stakeholder dialogue and strategic planning; 4) formalization, operationalization and institutionalization of the proposed food and agriculture policies; and 5) implementation, monitoring and renewal of the strategic agro-food plan in the city region.

Details on the process are meant to help the reader in implementing a multi-stakeholder agro-food system. The three planning approaches provide a context for the process, while the five phases detail the process. The latter are presented via questions to guide the reader through the phases, incorporating multiple stakeholders in the process.

The chapter offers a great deal of useful material for planners, including a detailed, comprehensive process for urban agro-food system planning. While the approach does not provide a means to differentiate between agro-food systems in the global North and South, nor any environmental, economic or social cues to assist the reader in determining which tools to use in what setting, the authors note the challenge of applying their methodology in city-regions with fewer resources.

The chapter offers a great deal of detail that could also be used to assess and monitor an existing and sophisticated agro-food system. The authors conclude the chapter by outlining challenges for practitioners and academics, which include: a need for comparative assessments; more rigorous documentation of methods and implementation; more integration of community-based and planning-led approaches; adaptation of this approach for resource-poor cities; and a need for monitoring and evaluation indicators.

Chapter 4 — Agriculture in Urban Design and Spatial Planning

Andre Viljoen, Johannes Schlesinger, Katrin Bohn and Axel Drescher

Review by Jennifer Marshman (Wilfrid Laurier University, Centre for Sustainable Food Systems)

Urban Agriculture (UA) is not simply an historical activity (Victory Gardens), or an activity of relevance only in developing countries. While UA is not necessarily a “large and visible presence”, as the authors state, it is growing in popularity in cities around the world and can significantly impact urban spaces (p. 101). Particularly in the context of developed countries, UA remains largely hidden in backyards. This is most likely due to prohibitive bylaws and policies which restrict UA activities in urban settings. However, as the authors indicate, growing awareness of the benefits of UA is culminating in increasingly permissive policies over the past couple of decades.

This chapter describes an impressive array of examples of UA in urban planning through an extensive review of the literature. The many iterations of UA are discussed and outlined

throughout the chapter, with a particular focus on land tenure, integration, and scale. For example, the authors argue that building UA capacity directly into new developments is key to successful and efficient urban integration. One example of this success is the extensive rooftop greenhouse on a new development in New York City, which is expected to yield 80,000–100,000 lbs. of fresh food each year (p. 113).

Examples of the need for, and implementation of, "green infrastructure and multifunctional landscapes" are also provided (p. 90). The authors discuss key theoretical concepts—space, tenure, environment—and also provide practical examples from both developed and developing countries. The latter illustrate both the requirements for the successful integration of these projects into urban spaces, and the feasibility and desirability of such integration.

The authors have managed to talk about urban planning in an engaging and accessible way, for those of us without a planning background. Extensive photos, more so than any other chapter, provide a much needed visual texture and depth to the examples provided. There is still a lot of integration needed to make UA an inherent component of urban planning, but a major shift in thinking is taking place. Some of the examples of urban planning measures are brief, but still provide a solid starting point for new researchers. With UA increasingly linked to other urban planning concerns, including urban population growth and global climate change, UA is increasingly found on planning agendas. The authors end with a call for a "conceptual shift" to ensure that efforts can be focused and consolidated (p. 117), and lead to increasing growth and inclusion of UA in urban planning.

Chapter 5 — Urban Agriculture and Short Chain Food Marketing in Developing Countries

Paule Moustier and Henk Renting

Review by Ning Dai (University of Waterloo, Department of Geography and Environmental Management)

This chapter sheds light on the status of urban agriculture and short food supply chains (SFSCs) in the Global South. Despite the progress made, urban agriculture and SFSCs are now faced with new challenges. The rise of industrial farming and supermarkets formed intense competition by price advantages and dispersed outlets. In response to the increasing competition, a host of innovative SFSC models were created to reinforce the connection between urban farmers and consumers. A research gap was identified in the end, which called for more detailed quantitative accounts of urban agriculture and SFSCs.

In my mind, quantitative research needs to be combined with qualitative studies that capture the ingenuity and motives of urban farmers through real world interactions. Although economic data is often preferred by policy makers, the suggestion to generalize social and

ecological benefits with an economic index is too limiting. While economic returns are commonly used to evaluate the success of business models, I believe that social benefits will be better represented through the words of urban farmers and entrepreneurs rather than an estimation derived from survey data by outsider researchers.

The chapter focused mainly on the supply-side initiatives, and future studies could complement the research findings with an analysis of the demand-side attitudes. Throughout this chapter, readers will be impressed by the prevalence of urban agriculture among cities in the Global South and the socio-economic benefits to their inhabitants. Readers will also appreciate the role of urban agriculture in SFSCs, and how initiatives emerged in response to corporatization and supermarketization.

Chapter 6 — Urban Agriculture's Contributions to Urban Food Security and Nutrition

Maria Gerster-Bentaya

Review by Jennifer Marshman (Wilfrid Laurier University, Centre for Sustainable Food Systems)

Since 2008, more people have been living in cities than ever before, and millions of urban residents are taking part of some form of Urban Agriculture (UA). UA can address multiple issues in expanding urban centers, including the growing or emerging issues of obesity, malnutrition and food insecurity. The chapter begins by acknowledging not only what we would traditionally consider to be malnutrition (under-nutrition), but also the emerging issues of micronutrient deficiency and over-nutrition—each with its own unique health consequences.

The chapter is laid out as follows: a discussion on urban food security and a review of the literature on how UA can help to address this complex issue. A balanced view provides insight into both the risks and benefits of UA, ending with remaining challenges that need to be addressed. The "nutrition" aspect is less comprehensively covered than the concept of food security itself. The author provides a big picture view with a few examples of specific cities, as well as a short summary of the coping strategies for dealing with food insecurity, including changing diets, finding alternative food sources, and redistributing household budget allocation.

A discussion about UA as a means of improving access to food and increasing resilience, is followed by a critical look at the risks associated with UA—including uptake of heavy metals and ingestion of pathogenic organisms. Some of these concerns are being considered by planners and health officials who are beginning to promote UA in various forms. For example, Toronto Public Health has developed a guide for people wanting to grow food at home called *From the Ground Up: Guide for Soil Testing in Urban Gardens*.

There is a particularly eye-opening table provided on page 147 which shows the percent of food provided through UA in cities around the world. Even though the sources are dated, the

numbers indicate both the possibilities and the need to investigate the kinds of changes that have taken place over the past two decades. For example, Shanghai is growing a significant proportion of their vegetables, eggs, poultry, milk and pork. With a population of nearly 17 million at the time of the survey, this indicates that even densely populated urban spaces are capable of significant food production. This is important as global cities and megacities continue to grow and expand.

This chapter acknowledges the need for productive collaboration and policy at all levels for UA initiatives to "create favourable conditions for the development of an urban food system that provides safe and nutritious and affordable food to…the urban population" (p. 155). The author provides you with an extensive reading list and a solid base from which to continue to explore this topic.

Chapter 7 — Productive and Safe Use of Urban Organic Wastes and Wastewater in Urban Food Production Systems in Low-Income countries

Pay Drechsel, Bernard Keraita, Olufunke O. Cofie, Josiane Nikiema

Review by Tammara Soma (University of Toronto, Department of Geography and Planning)

As a growing number of low-income countries undergo urbanization, issues of urban food insecurity and the need for better management of urban waste have increasingly come to the fore. The chapter by Drechsel, Keraita, Cofie, and Nikiema has attempted to shift the paradigm from viewing waste as a risk/hazard into one that views urban organic waste as a valuable source of nutrients.

The chapter focuses on the potential of human excreta, urine, wastewater and food waste as a source of nutrients in agriculture. The authors argue that utilizing these wastes will also lead to waste reduction in open, non-engineered landfills in low-income countries.
The forecast of "peak phosphorus" means that there will be a growing need for alternative fertilizers. Both fecal matter and urine contain phosphorus, as well as nitrogen and potassium. Key recommendations gleaned from the chapter include the need to improve the safety of these nutrient sources, acknowledge the benefits of processing human excreta into fecal sludge pellets, and change the public stigma around using fecal waste.

A strength of this chapter is its recognition of the importance of developing locally appropriate laws that will encourage the safe use of these resources. However, several weaknesses limit the effectiveness of the chapter. The authors' use of the term "food waste" to define cotton husks, poultry manure and human excreta alike is problematic, as these are very different waste streams with separate—as well as non-urban—sources and issues. The chapter

would benefit from a stronger focus on one waste stream instead of these various organic wastes: there was more to be said, but the message was diluted.

Similarly, while the authors outlined the benefits of using human excreta, urine, and wastewater for urban agriculture, the chapter did not sufficiently prove the feasibility of using these waste streams. It is unclear whether the benefits of using these waste streams outweigh the potential harms, risks, and challenges that would be faced by urban farmers with scant resources in low-income countries.

Chapter 8 — Urban Agriculture and Climate Change

Shuaib Lwasa, and Marielle Dubbeling

Review by Bryan Dale (University of Toronto, Department of Geography)

In this chapter, Lwasa and Dubbeling provide a helpful overview of the state of urban agriculture in relation to the climate crisis. Drawing on academic literature and studies that have taken place around the world, the authors discuss the challenges and opportunities for urban agriculture in the context of ongoing environmental change. Beginning with a re-cap of the climate-related problems facing city governments and residents—from storm surges and landslides to an exacerbated urban heat island effect—Lwasa and Dubbeling draw particular attention to the innovations that will be required in countries of the global south, where infrastructure challenges already abound. They then discuss the potential benefits of urban agriculture for climate change adaptation and mitigation. Amongst others, adaptation benefits include the capacity of city-based farms and gardens to help reduce runoff following rainstorms, thereby lowering the risk of flooding hazards. Mitigation benefits range from carbon sequestration, through effective soil management and agroforestry, to reduced emissions that can result from producing food closer to consumers, and employing techniques such as reusing organic waste.

On the whole, this chapter does a good job of summarizing an extensive literature that links urban agriculture and climate change, while illustrating key points with examples from projects taking place in cities around the world. However, although there is mention of studies that have taken place in New York, Toronto and Seattle, for example, the authors focus more on perspectives from the global south. The authors also focus more on technical details than the politics of implementing urban agricultural projects in socially just ways. They mention issues such as land conflicts and the importance of marginalized groups contributing to decision-making processes for urban governance, however a full treatment of the political ecology of urban agriculture in relation to climate change certainly seemed to be out of scope here, and likely merits its own book.

Chapter 9 — Urban Horticulture

Hubert de Bon, Robert J. Holmer and Christine Aubry

Review by Karen Landman (University of Guelph, Landscape Architecture)

Urban Horticulture aims to describe the major plant production systems, practices and constraints of urban horticulture, and new techniques that tackle the restrictions of urban crop production. Within the first page, a very limited list of edible plants found in urban environments is provided: however, of the eight "fruits" listed, only the strawberry grows in my native Canada—and only in the southern regions. This table seems unhelpful, as the edible plants grown in any given city will depend largely on climate and culture. The table also includes four ornamental plant genera. A thorough list of species used in urban horticulture throughout the world would be much more extensive than what we find here, but ultimately not particularly useful to the reader. Unfortunately, the first five pages and other parts of the chapter offer this sort of grab-bag information on disparate urban situations around the world.

The chapter becomes more helpful in outlining the negative factors influencing urban horticulture, and in providing examples of growing techniques used where resources are extremely limited, as well as where optimal resources exist. There are very real challenges in growing food in the urban environment but some of the challenges presented in this chapter are not global in nature—such as human excrement in irrigation water. Perhaps it would have been more helpful to focus on urban horticulture in developing countries, where institutional support might be less than what is needed to provide safe irrigation water and routine soil testing. The authors move quickly from one challenge to the next without much discussion on problem solving, or on the policy context—or lack thereof—for the varied environments from which they draw examples.

Greater editorial rigor could have honed this chapter to deal more clearly and particularly with edible crop production challenges and solutions, while also qualifying the varying contexts of urban environments around the world.

Chapter 10 — Urban Livestock Keeping

Delia Grace, Johanna Lindahl, Maria Correa and Manish Kakkar

Review by Jennifer Marshman (Wilfrid Laurier University, Centre for Sustainable Food Systems)

Urban livestock is one of the more controversial debates affecting Urban Agriculture (UA). There are few people roosting on their fences—people tend to be strongly for or against urban livestock. UA in developed countries has been criticized in the literature as being elitist, unsanitary, and a poor use of urban space. In popular media, disputes over urban chickens

revolve around fears of noise, pests, disease, and attracting unsavory people and activities. Despite the controversial nature of the topic, the chapter follows a traditional format, outlining the risks and benefits of livestock keeping, as well as adding a view to the future.

A historical overview provides several fascinating facts to capture your attention, including the reason for an increase in urban dairying after the 1850s, and an outline of which American cities likely exist today because of their livestock-rearing origins.
For thousands of years, humans and food-producing livestock have lived side by side. The authors attribute a combination of the industrialization of agriculture (large scale and specialized) and a changing view of animals as dirty and disruptive to civilized people, as reasons for the decline in urban livestock keeping. Historically, cities across North America, Europe and Australia shifted away from urban livestock keeping. Zoning restrictions and new regulations were initiated globally, although less stringently enforced in cities in Africa and Asia where urban livestock keeping remains quite visible in some places. The discussion on risks is extensive but an assessment of the degree of risk—while mentioned in closing—is conspicuously missing. Considering that one of the primary barriers to urban livestock keeping is the perception of risk to human and environmental health (as stated in the conclusion), this warrants further discussion
and research.

Given that “ruminant livestock are a major contributor (18%) of global anthropogenic greenhouse gas emissions”, a larger discussion about the effects and impacts on global climate change would have been useful. Also, there has been increasing concern about the health impacts (human and environmental) of consuming meat products. While this appears to be beyond the scope of this chapter, including a statement about the health impacts of meat eating and perhaps even the alternatives could have been a worthwhile addition. Lastly, there was no mention of animal welfare, which is disappointing given that movements such as pastured meat and organics are particularly concerned with ensuring appropriate treatment of animals. In all, the authors have provided a good overview of the nature of urban livestock keeping along with an extensive list of references from which to continue reading.

Chapter 11 — Urban (Agro-)forestry

Fabio Salbitano

Review by John Bacher (Environmental author, researcher and consultant)

In *Urban Forestry and Agroforestry*, Fabio Salbitano, Simone Borelli, and Giovanni Sanesi capture both the amazing accomplishments and daunting challenges of what they term *green infrastructure*. This, they stress, is a healthy and urgently needed alternative to “grey infrastructure ie. Human engineered solutions that often involve concrete and steel.”

Most exciting are the vivid examples of practical and efficient green infrastructure that the authors find growing in "cities and towns of different size, culture and income." Some of the most exciting innovations are found in three cities in quite different parts of the world.

> Bogata, Columbia is pursuing upstream landscape conservation and restoration as an alternative to more conventional water treatment technologies. Ho Chi Minh City restored mangroves instead of building dikes in order to protect shorelines from storm damage. And a chemical factory in Texas, USA, built a wetland instead of using deep well injection to treat wastewater.

These examples are well selected, since the conventional grey alternatives of concrete and steel—such as doomed dikes—pollute groundwater and make floods more catastrophic in the long term.

The authors could have improved their contribution with an acknowledgment that many of their favoured approaches—although growing mercifully in popularity and application—have a very long and honourable, but conflict-filled history. One of the most revealing stories demonstrates both the benefits of green infrastructure and the often bitter conflicts involved in getting it accepted.

The Shilwald is the magnificent municipal forest of the Swiss City of Zurich, established in 1489. Originally providing "an affordable supply [of wood] for its citizens", the Shilwald is now a primordial nature reserve, which seeks to restore rare species such as the European Brown Bear. The Shilwald is a model for municipal forests around the world, inspiring both the founder of the US Forest Service, Gifford Pinchot, and the Canadian pioneer ecologist, Edmund Zavitz. And yet its founder, Hans Waldmann, was publicly executed in 1489. While greening infrastructure is an urgent necessity, it involves battles with conventional thinking often tied to the self-interest of the promoters of concrete and steel that it struggles to replace.

Chapter 12 — Urban Aquaculture for Resilient Food Systems

Stuart W. Bunting and David C. Little

Review by Mashiur Rahman (University of Guelph, School of Environmental Design and Rural Development)

By 2050, the world population is predicted to increase to 9 billion. Worldwide, aquaculture is important for food security and nutrition. Aquaculture is the fastest growing area of the world's food-producing sector, representing approximately 50 percent of global fish production. The authors begin the chapter by defining urban aquaculture and urban farming, and pointing to a growing scientific literature that indicates their important role in meeting the demand for culturally relevant animal protein in densely populated areas. The authors outlined different

existing fish farming systems, addressing prevailing management regimes and production risks. They also describe specific urban aquaculture production plans that are relevant for poor and marginalized populations, for food security, and for sustainable urban development. The aquaculture methods for land-based systems, ponds, multifunctional wetlands and cage systems are described, with each section followed by "Research in use" to show how these methods are applied in developing and developed countries' urban aquaculture farming. The authors also discussed aquaponics production systems—an integrated culture of hydroponics and aquaculture—in developing countries, though it was very brief. Because of limited space in the densely populated urban areas, aquaponics is attracting public interest.

The authors focused on urban aquaculture in developing countries, where rapid growth of population results in a need to produce more fish for food security and livelihoods. Bunting and Little outlined the opportunities and challenges for intra-urban and peri-urban aquaculture development in diverse conditions for poor and marginal groups. They also critically reviewed challenges and opportunities using a SWOT model (Strength, Weakness, Opportunities and Threats), which enriched and strengthened the discussion. Pollution control and inadequate wastewater treatment are identified as important factors that will affect the success of urban aquaculture, as they could cause fish death as well as environmental impact in urban areas. The authors conclude the chapter discussing how to promote urban aquaculture and support need through a STEPS (social, technical, environmental, political, sustainability) framework. They also recommended conducting cost-benefit analyses to evaluate the potentiality of urban aquaculture for a sustainable environment. The strength of this chapter is the discussion of different urban aquaculture systems for food resilience in developing countries, the strength and challenges, and how to promote the various types of urban aquaculture, taking into account their limitations.

Chapter 13 — Gendering urban food strategies across multiple scales

Liam Riley and Alice Hovorka

Review by Charles Z Levkoe (Lakehead University, Department of Health Sciences, Canada Research Chair in Sustainable Food Systems)

Liam Riley and Alice Hovorka's chapter analyzes the intersecting politics of gender inequality and food insecurity at multiple scales. The authors present an overview of literature addressing key issues at the individual, household, city, nation, and global scales to highlight the forces shaping urban food systems. Their analysis uses a 'feminist foodscapes framework' (Hovorka, 2013) in order to highlight power imbalances that maintain inequality within urban food systems. By addressing the structural disadvantages faced by women (relative to men), the authors aim to show the ways that gender is embedded across the scales of urban life, and expose it as a root

cause of inequality within the food system. Their approach aims to addresses immediate challenges of food access as well as longer-term strategic goals like food as a human right.

In the final section, Riley and Hovorka suggest ways that embedding gender across scales of urban life creates opportunities for improving gender equity within food systems. They emphasize the need to empower both men and women to embrace opportunities that politicize the gendered dimensions of food work. The discussion revisits the five elements of mainstreaming (see Hovorka & Lee-Smith, 2006) in respect to the multiple scales approach to gendering urban food systems. These elements include: Developing conceptual capacity "to make the necessary connections between power-laden fields of food and gender"; identifying practical and strategic needs and their interconnection across scales; developing political will and commitment among key stakeholders to address the structural causes of gender inequality; establishing more equitable resource allocation and better capacity building; and, improving research on gender dynamics to identify problems, connect issues and identify the connections between "practical and structural causes of gender inequality and food insecurity".

Overall, the chapter is extremely well written and presents an excellent summary of issues related to gender and urban food security—a subject too often ignored in sustainable food systems literature. In short, the authors present an approach that is fundamental to understanding and creating more resilient urban food systems. The primary downfall of the chapter is that it attempts to cover a significant amount of ground in a very limited space. Each of the major sections and subsections barley scratches the surface of the debates and materials available. Thus, this chapter presents a broad overview of this important topic and may either be considered an introduction to new readers or a summative overview for more experienced researchers and practitioners. There are however, a number of good references and case studies included in the text that point to further reading for deeper engagement. Absent from the chapter is any discussion of social movements that have positioned women at the forefront of struggle (e.g. women's movements, the right to the city, food movements) which are covered in other texts (see for example Barndt, 1999; 2008). Instead the chapter focuses primarily on top down policy options for change. While space was clearly a consideration in decisions on what to include and exclude, it is difficult to have a conversation about food system change without including the voices of those struggling for justice at the grassroots.

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Chapter 14 — Financing Urban Agriculture: What do we know and what should we know

Yves Cabannes

Review by Simon Berge (University of Winnipeg, Business Chair of Cooperative Enterprises)

This chapter seeks to define what kind of financial system is best suited to different types of urban agriculture. Four types of urban agriculture are presented: 1) subsistence-oriented; 2) market-oriented; 3) leisure and recreational; and 4) a combination of the three. The author suggests a need to focus beyond basic credit for urban agriculturalists, indicating that the financial tools should equate to: resource mobilization (monetary and non-monetary) + savings + subsidies + credits.

The complex nature of urban agriculture financing is presented through case studies and a literature review. From the case studies, the author suggests that it is imperative to understand the role of financial intermediaries within the system. Intermediaries define the financial products, and which urban farmers can gain access to them—the common types of financial intermediaries being 1) local government, 2) private and community-based, and 3) private banking systems.

The author concludes that there is no single standardized financial system for urban agriculture. A mix of financial instruments, taking into account the city's environment, is required to create the right financial system for urban agriculture. The author suggests that financing of urban and peri-urban agriculture is a major bottleneck in maintaining, expanding and scaling up the production of affordable, nutritious and accessible food
in cities.

The chapter presents a strong case for innovative financial products and the involvement of informed financial intermediaries in urban agriculture. The author clearly outlines the needs of urban producers for specific financial products that meet their production scale and timeframes. The chapter does not focus on Canadian urban agriculture, but the author outlines financial issues present in comparable urban agricultural systems. While the author does not present a single financial system for each type of urban agriculture, he clearly outlines the areas of future research that would lead us toward the answers.

Chapter 15 — Urban Agriculture and Emergencies/Disasters

Andrew Adam-Bradford and René van Veenhuizen

Review by Jennifer Marshman (Wilfrid Laurier University, Centre for Sustainable Food Systems)

Other than several of my hairstyles over the past decade, I am in no way an emergencies or disaster expert. With that said, I was very interested to read this chapter because looking at the role of Urban Agriculture (UA) in disasters and emergencies seems a novel approach or lens through which to view these activities. The chapter opens by claiming that—for disaster preparedness and recovery—UA can improve community resilience, improve disaster responses across scales (local, national, international), and prevent some disasters from occurring in the first place. These are big claims to make, and the authors make a valiant effort to provide evidence to support them.

The first few pages set the stage by briefly differentiating between disaster types and vulnerabilities. The focus is on developing countries with particular vulnerabilities and reduced capacity to respond following (human or natural) disasters. A critique of the traditional aid model opens a discussion about how combining immediate food distribution (food aid) with a food production plan (urban agriculture) is key to the success of long term resilience and capacity building of disaster impacted communities.

The Sphere Project is cited and described throughout the chapter, and guidelines from the project are outlined. Most importantly, these guidelines provide a framework for ensuring the "re-establishment of longer-term food security" (p. 402).

It is unclear why this was the chapter of choice to wrap up the book, but one thing is clear—there are important lessons to be learned from the many examples of food production following disasters that are happening globally. Several brief, but effective, illustrative examples are provided throughout the chapter. Perhaps it is an intentional foreshadowing of things to come, in the face of global climate change, and forecasts of peak oil and the collapse of the industrial food system. In that case, this is a fitting end chapter illustrating the important role of UA moving forward into an unknown future.