Introduction
Food challenges faced by an urbanising world
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While urbanisation worldwide sets up unprecedented challenges for feeding cities with accessible, affordable food and healthy diets, urban food security and food systems are receiving growing attention at an international level and in a growing number of cities of all sizes. However, the issue of food and urban planning is insufficiently covered in existing literature. How food is produced, processed, distributed, consumed, recovered and wasted and how local food systems complement rural agricultural production are issues that relate closely to urban planning, which can be either an opportunity to feed cities better or an obstacle to making food systems work sustainably. Although literature on this topic is limited, and there exist very few comprehensive planning textbooks that properly consider food planning and the integration of food systems, which may be part of formal and/or informal food systems, some cities and regions have made huge progress over recent years. However, their practices have not been made visible to a wide audience, and reflections on their limitations and successes deserve greater attention.

This book aims to address these gaps through a wide range of contributions written either by urban food practitioners or by scholars and researchers specialising in topics related to food system planning. These chapters are grounded in the reality of 20 cities and towns of quite different scales and sizes (see Table 0.1) and clearly indicate that innovations and critical reflections are emerging across the board, from small and medium-sized cities – according to international standards, of less than 500,000 inhabitants – such as Minneapolis or Providence in the US, up to megacities and metropolitan regions of well beyond 10 million inhabitants, such as Tokyo, New York and Hangzhou. Some of these experiences and this critical
research arises in regional capitals containing between one and five million inhabitants, such as Cape Town in South Africa, Yogyakarta in Indonesia, Milan in Italy and Belo Horizonte in Brazil. This selection of cities, of different size and dynamics, from all over the world – (see Figure 0.1) – substantiate some key lessons transcending local specificities or spaces. Some of them are mentioned in this introduction and expanded upon in the chapters. They, hopefully, bring insights applicable to the systemic food planning of tomorrow’s cities.

This introduction highlights some food security and nutrition challenges faced by the twenty-first century’s urbanising world which are crucial for professional and non-professional urban food planners engaging in food planning processes.

At least six major challenges can be identified and need to be taken into consideration by urban food planners:

- growing food insecurity, undernutrition and overnutrition;
- understanding what ‘urban’ means and its multiple dimensions in an urbanising world;
- urban poverty in an increasingly inequitable world;

Table 0.1  Population range of cities studied in this book

<table>
<thead>
<tr>
<th>Number of inhabitants</th>
<th>Africa</th>
<th>Asia</th>
<th>Europe</th>
<th>Latin America</th>
<th>North America</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 5 to 10 million</td>
<td>Capetown [South Africa]</td>
<td>Yogyakarta [Indonesia]</td>
<td></td>
<td>Milan [Italy]</td>
<td>New York [USA]</td>
</tr>
<tr>
<td>From 1 to 5 million</td>
<td>Accra [Ghana]</td>
<td>Portland and Seattle [USA]</td>
<td></td>
<td>Belo Horizonte [Brazil]</td>
<td></td>
</tr>
<tr>
<td>From 500 000 to 1</td>
<td>Tamale [Ghana]</td>
<td>Surakarta / Solo [Indonesia]</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>million</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 500 000</td>
<td></td>
<td></td>
<td></td>
<td>Minneapolis Providence Dougherty and Chautauqua [USA]</td>
<td></td>
</tr>
</tbody>
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Source: Authors.
• informal food sector and food street trading;
• challenges resulting from climate and environmental changes;
• access to secure urban land for food-related activities.

0.1. First challenge: growing urban food insecurity, undernutrition and overnutrition

In 2015 an estimated 54 per cent of the world’s population resided in urban areas and the urban population is expected to increase to 6.3 billion by 2050, when 66 per cent of the world’s population is projected to be urban (UNDESA 2014). The urban growth rate has been much faster in some regions than others and this is a challenge for planners in general and food planners in particular. Although urbanisation is clearly a global phenomenon, three areas in the world today are undergoing unprecedented urban revolutions, in terms of scale and rhythm, where cities are likely to eat up arable land at a prodigious rate and unprecedented challenges are arising for urban food security. The highest growth rate between 1995 and 2015 occurred in the least developed parts of the world; Africa is the most rapidly urbanising continent. Over the next 30 years, India will have to accommodate over 300 million new urban people and China is facing an urban revolution of about the same scale. It is therefore necessary to address urban food security not only as a global issue, but equally as a national and local one, bringing food planning issues of a quite different nature at each level. A complexity that this book addresses is precisely the changing nature of the effects of urbanisation in different locales.

0.1.1. Defining food security and indicating some of its limits

Before proceeding with the analysis of the integration of food into urban planning, we need to explore the limits of a commonly accepted definition of ‘food security’ used in this book: ‘A situation that exists when all people, at all times, 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’ (Food and Agriculture Organization [FAO] 1996).

Based on this definition, four food security pillars can be identified: food availability, economic and physical access to food, food utilisation and stability over time (FAO 2008; FAO et al. 2014). A first observation is that the definition embraces both urban and rural situations and is not
Figure 0.1 Location of cities referenced in this book
specifically about urban food insecurity. A second observation is that the notion of food security, as part of the fulfilment of the right to food, is challenged by the notion of food sovereignty, an idea that largely originated from rural-based movements and food producers at the World Food Summit in 1996:

Food Sovereignty is the right of peoples to define their own food and agriculture; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives; to determine the extent to which they want to be self-reliant; to restrict the dumping of products in their markets; and to provide local fisheries-based communities the priority in managing the use of and the rights to aquatic resources. (Via Campesina 1996)

A third observation is the recognition of food access as a key factor, bringing attention to inequality of access, resulting in greater policy focus on incomes, expenditure, market and prices and bringing food security closer to the poverty reduction agenda. The main limitation is that the spatial dimension of food access is not clearly highlighted. A fourth observation is that food security entails access to nutritious food, which is emerging as a major challenge in cities and a crucial issue for urban planners to take into consideration.

As expressed by authors such as Satterthwaite (2011), the issue of hunger in urban areas has long been neglected for various reasons. It seems that, despite a growing interest in food in cities of both the Global North and Global South (Battersby 2013), hunger and food security in urban areas of all kinds are still largely invisible and therefore their integration into planning remains overlooked. What we know is that the proportion of people who are food insecure is growing faster in cities than in rural areas and that hunger and malnutrition in urban areas are strongly related to the inequitable distribution of available resources (UN Habitat 2010).

Global figures on urban food insecurity remain scarce. However, a recent set of data at global level gathered by FAO gives a first approximation of the dramatic number of ‘hungry voices’ in different parts of the urban world. To sum up, 146 countries included in the study, as much as 19.8 per cent of the urban world population, are moderately food insecure, nearly one in five, whereas 7.3 per cent are considered severely food insecure. Moreover, 50 per cent of urban populations in the
least developed countries are food insecure, compared with 43 per cent in rural areas (World Bank Group and FAO 2017, 36).

Our point here is that food insecurity, and unfortunately severe food insecurity, is hitting nearly the same proportion of people in urban and rural areas, and in some regions the proportion is worse in urban areas. And this is new.

The vision of the cities as hubs of prosperity, wealth and development, compared with rural areas, is unfortunately not accurate when it comes to food insecurity. This is a challenge for developers and for planners.

Another myth that needs to be challenged is that hunger is essentially an issue of the least developed countries, landlocked countries or small developing island states. It is a problem in countries of these kinds, but, at the same time, food insecurity is present in Europe and North America, with similar proportions in rural and urban areas (nine per cent moderate food insecurity and 1.8 per cent severe food insecurity for Europe). In 2015, around 50 million urban Europeans were food insecure. In absolute terms, food security is predominantly an urban issue in developed regions and is becoming primarily an urban one in a growing number of urbanising developing countries as well.

Wealthy cities from the Global North have also failed to properly address food insecurity. In Chapter 16 of this book, Nevin Cohen points out that early efforts in food planning in New York City focused on reducing diet-related diseases. Of a population of approximately 8.5 million, about 1.36 million New Yorkers are food insecure and 1.8 million depend on federal Supplemental Nutrition Assistance Program (SNAP) benefits to buy food. Spatial planning is used to provide incentives for grocers to locate to neighbourhoods lacking access to fruit and vegetables and other nutritious food.

Some of the cities described in this book have been able to address these massive urban revolutions at scale and to significantly improve access to and the quality of fresh food for their population. This is the case for instance of Hangzhou in China, a metropolis of 9.19 million inhabitants in a metropolitan region of 21+ million (Chapter 12, this book). In less than ten years, through a relatively top-down planning process, with its own limitations, Hangzhou citizens are living within a 10–15 minutes’ walk from one of the 177 renovated or newly built fresh food markets. Two mega-markets covering, respectively, 400 and 30 hectares are supplying the largest share of these fresh food markets. Forty per cent of the food comes from Hangzhou Metropolitan Area.
0.1.2. The challenge of malnutrition

Globally, one person in three is ill nourished and malnutrition embraces various lesser-known aspects – primarily undernutrition (underweight, stunting, wasting), micronutrient deficiencies and overweight and obesity – which affect all countries whether developed or developing. The different aspects of malnutrition coexist within countries, communities, households and individuals. Although income level affects overall consumer demand for food and consequently impacts upon the level of malnutrition, urbanisation is playing a key role in the ‘nutrition transition’, involving changes in lifestyle and dietary patterns. People in urban areas, where marketing has a stronger influence and supermarkets are more accessible, are expanding their food choices within the food environment, changing their diet in both positive and negative ways. In urban areas, diets are shifting towards increased consumption of food away from home (from street vendors, modern fast food chain, restaurants) with a large share of packaged and processed food often rich in salt, sugar and fat, leading to obesity and associated diet-related non-communicable diseases such as heart disease and diabetes.

In New York City, more than half of all adults are overweight or obese, and 20 per cent of kindergarten students are obese, with rates significantly higher among African Americans and Latinos than Whites (Chapter 16, this book). More recent studies have highlighted the fact that lower-income households are most exposed to calorie-dense, salty or sugary foods that are high in energy, but nutritionally compromised (Chapter 9, this book). In addition low-income households often have limited access to clean water, sufficient space for cooking and storage, and limited access to energy sources for cooking, refrigerating and heating food, which further compromise the quality of their diet. Urban low-income households experience the coexistence of overnutrition and undernutrition even within the same households:

In households of urban slums in Nairobi, a study of 3335 children and their mothers showed that only 7.5% of the mothers were underweight, while 32% were overweight or obese. Moreover, 43% of the overweight mothers and 37% of the obese mothers, respectively, had stunted children. (World Health Organisation [WHO] and UN Habitat 2016)
Economic access to nutritious food is clearly not the only driver to promote nutrition, which is a more complex issue with multiple place-based challenges relating to the physical and sociocultural food environment. Access to fruit and vegetables, perishable food rich in nutrients is, for example, strongly linked to the efficiency of the food logistics systems. FAO (2011) estimates that losses and waste of fruit and vegetables can reach as much as 50 per cent, throughout the supply chain, from production to end consumption, causing an increase in cost for the final consumer and consequently limiting adequate access. Our argument here is that urban planning could have positive direct and indirect influences on the food environment and on access to nutritious food, impacting on consumers’ choices and the quality of their diet. Geographical proximity to nutritious food, land use planning, zoning regulations, food infrastructure, regulations that favour food logistics efficiency in the last mile, and typology of food outlets are all part of the food environment; modifying them will have an impact on consumers’ food choices.

0.2. Second challenge: understanding what ‘urban’ means in an urbanising world

Stating that our world is becoming predominantly urban, even if this is quite real, begs the question of what is actually meant by ‘urban’. On the one hand, definitions of ‘cities’ and ‘urban’ vary greatly from one country to another, which makes generalisation quite difficult. On the other hand, an important aspect to be considered by food planners is in which categories of urban areas the growth is taking place.

In 2030, 40 per cent of the world population will live in rural areas and another 23 per cent in settlements with less than 300 000 inhabitants. It is estimated that 9.8 per cent will live in ‘small’ cities between 300 000 and one million people (The Economist 2015). The fastest-growing urban centres will be small and medium-sized cities with less than one million inhabitants, which account for 59 per cent of the world’s urban population and 62 per cent of the urban population in Africa (UN Habitat 2016). According to FAO (2017), 85 per cent of the global population live in urban areas or within three hours’ travel time from an urban centre with 50 000 people or more. Half of the world’s population resides within or in proximity to small cities and towns, compared with 35 per cent living in or near...
larger cities. In developing regions these shares go down to 49.5 and 32 per cent, respectively.

The fact that a larger share of the world population lives in or gravitates around medium-sized and small cities means that these latter are likely to play an important role in food demand. Even if small towns are spread over a territory, networks of small towns, taken as a whole, do play a crucial role within a food supply system. In East Africa, small cities are rapidly diversifying their economic base and generating strong linkage to rural areas. Latin America has seen explosive growth in towns that are economically linked to both their surrounding rural areas and to a larger urban agglomeration (FAO 2017).

Because of their hinterland and peri-urban areas, their livelihoods base or their availability of land, they can become food security hubs and net producers of food. Where food is concerned, they share relatively little with megalopolises or demographically decaying cities. A one-size-fits-all food planning approach does not work and this book presents experiences from around 20 different urban situations, reflecting their diversities and potentials and how food planning has addressed local and regional specificities.

0.3. Third challenge: urban poverty in an increasingly inequitable world, and its impact on urban affordability and accessibility

Multiple evidence suggests that food accessibility in urban low-income areas is strongly connected to employment instability and the low cash income of the urban poor. A large majority rely on informal sector activities and casual labour, which provide only low and irregular earnings. Food security and nutrition in urban areas are therefore deeply connected to urban poverty and slum prevalence in urban areas. In slum areas people live in congested and overcrowded situations, with insufficient space for cooking and storage. Small living spaces with no or small kitchens and expensive cooking fuel costs also influence household diets, with the result that households rely heavily on ready-made or fast food. High reliance on street foods has health implications when vendors are poorly regulated in terms of food safety and hygiene. Additionally, poor water, sanitation and health conditions result in poor food utilisation (Mohiddin et al. 2012; Tacoli and Vorley 2015; Kimani-Murage et al. 2014).

People spend a quite different share of their income on food according to whether they are rich or poor and live in the Global North or Global
South. In the US, for instance, urban households spent between 10 and 40 per cent of their income on food, depending on their economic status (Pothukuchi and Kaufman 1999). In developing countries, the share that poor people spend on food is much higher and has a direct effect on the affordability and accessibility of nutritious food: 85 per cent in Dar es Salaam and 60 per cent in Bangkok and Kinshasa (Redwood 2009). In analysis of the food expenditure share, a clear pattern emerges that follows Engel's law: evidence demonstrates that, in comparison with poorer households, wealthier households spend a much smaller proportion of their household’s budget on food. For instance, the food expenditure share in Port au Prince is 58 per cent for the poorest segments of the population, but 33 per cent for the wealthiest (World Food Programme [WFP] Global Food Security Cluster 2016).

More recent and extremely detailed research undertaken by the poor themselves and coordinated by the Asian Coalition for Housing Rights (ACHR) (Boonyabancha and Kerr 2015) in four different Asian countries points up important elements of food planning. It gives the share of monthly monetary expenses that urban poor and very poor people spend monthly on food and drinking water: Nepal 43.5 per cent; Thailand 50.3 per cent; Sri Lanka 51.9 per cent; the Philippines 43.5 per cent (the very poor).

A huge challenge for urban and regional planners is to integrate food into urban planning not only to make food affordable for cities as a whole, but to propose solutions that will improve access to nutritious food for the poor and the very poor. The challenge is much more serious in poor countries, and even more so for the poor and the very poor. From the perspective of economic planning, and taking the four countries analysed by ACHR and the grassroots, food emerges as the main economic driver in low-income neighbourhoods. The conventional idea that housing, basic services and neighbourhood improvement are the urban economic development engine is therefore seriously challenged by facts and figures. A very poor urban household of four people spends immensely more on food and drinking water than for housing: five times more in Nepal, 15.4 times more in Sri Lanka, 8.2 times more in the Philippines and 20.5 times more in Thailand. Figures are of the same range when considering the poor and not the very poor.

Our central argument in this section, and perhaps for the book, is that urban development planners are one of the pillars of the systemic food planning approach developed in this book. Urban planners need to take the above-mentioned data (relating to food as an urban economic development engine) as a major finding for planning equitable cities in the future, grounded in cities’ actual monetary dynamics.
0.4. Fourth challenge: informal food sector and food street trading

Informal food systems embrace a variety of activities: food produced or prepared/processed at home and sold in the street or market; food prepared in outdoor public spaces; fresh and processed food sold by mobile street vendors (see Figure 0.2); food sourced from wholesalers and sold at different locations; food transferred from family members based in rural areas or shared through neighbourhoods (World Bank Group and FAO 2017, 36) and food remittances;⁴ even food scavenged from garbage dumps. The stakeholders involved are quite often the most vulnerable, primarily women, refugees and displaced populations, since informal food systems require little start-up capital and no formal education. (World Bank Group and FAO 2017; FAO 2016). According to a study of street vendors in 10 cities in developing countries,⁵ vulnerability is more prevalent among fruit and vegetable vendors than among vendors of other goods and services (Roever 2014).

Even if the available information on informal food systems remains limited, various studies (International Institute for Environment and Development [IIED] 2016) highlight the clear contribution of informal food systems to the urban economy, to the preservation of the food culture and to urban food security, particularly for low-income households.

Figure 0.2  Street market in Amman, Jordan. (Source: Yves Cabannes)
In Cape Town (see Chapter 9, this book), despite the supermarkets’ expansion even in low-income areas, poor households continue to buy their food from informal sector outlets that are more responsive to their needs in terms of opening times, unit size and opportunities to buy on credit. Despite their pivotal role, informal food vendors in developing countries are quite often victims of abuse by the authorities, including police harassment and arbitrary confiscation of merchandise, or restrictions relating to licences and fees. They also have limited access to public space, infrastructure and services. This lack of recognition of the informal sector as part of the urban food economy helps to make it invisible in official statistics. Integrating informal food systems into urban planning means going beyond simple regulation, a few food safety interventions or the assigning of public spaces for production or trade. It means understanding the roots of informality as quite often reflecting a weak institutional environment that generates barriers with complicated registration and licence mechanisms or unaffordable taxation. Effective mechanisms, and planning should be one of them, are needed to support the informal sector, which quite often generates wealth and jobs and contributes to alleviating poverty and increasing food security. A central argument in this book is that food systems planning should include both formal and informal food systems stakeholders, recognising both of them as crucial resources for understanding the local food environment and addressing food security and nutrition with place-based solutions.

0.5. Fifth challenge: the challenge of climate and environmental changes

The multiple effects of climate change, including the growing number of shocks and extreme weather events such as floods, droughts and storms, impact on urban areas and affect primarily the urban poor, the places they live and their physical and economic access to food. Greenhouse gas emissions (GHG) originating from the whole food cycle range between 19 and 29 per cent of the total (Vermeulen et al. 2012) and therefore food systems could play a crucial role in bringing down GHG. The land used for food, the way food is distributed and consumed and the management of food waste are important elements in decreasing GHG and climate change adaptation.
A crucial challenge is how urban and regional planners will integrate climate and environmental constraints in food systems planning and integrate food-related issues in cities’ climate action plans. Current experience and emerging research highlight a number of elements important for planners to consider: better integration in spatial planning of urban agriculture, nutritious food outlets and farmers’ markets; short supply chains, which means localising food production in and around cities in order to reduce the environmental impacts of food transport (see Figure 0.3) and waste, reduce water footprint and increase opportunities for poor households to access nutritious food; sustainable post-harvest logistics and improvement of food distribution mechanisms; promotion of the circular economy as an alternative model in which food waste is significantly reduced through composting, redistribution and recovery. A clear task for planners includes working with those most at risk from various shocks and extreme weather events and facilitating planning partnerships between local stakeholders and local government. Food councils or related mechanisms, as developed in this book, provide opportunity to engage communities and different actors and support changes on the ground.

Figure 0.3  North Road between Cap Haitian and Ounaminthe, Haiti. Improvement of roads and local transport systems is an integral part of city region food systems planning from the perspective of improving nutritious food security. (Source: Yves Cabannes)
0.6 Sixth challenge: access to secure urban and peri-urban land for food-related activities

The challenges relating to climate change, only briefly mentioned here, are probably, together with the challenge of accessing urban and peri-urban land for food-related activities, the most difficult and uncertain ones to address. On the one hand, expanding cities are eating up their arable land and drinking up scarce water resources that have significantly contributed for centuries to feeding urban populations immensely smaller in numbers. On the other hand, the data on land grabbing of arable or pastoral land are alarming (Rulli et al. 2013; Bren d’Amour et al. 2017) and entire rural and peri-urban territories are converting to industrial farming for food export goods. As a result, rural migration continues, turning rural farmers into food-dependent urbanites without land on which to cultivate crops, raise animals or transform locally produced food.

Food planners have a strategic role to play in preserving agricultural land in and around cities, and expanding and securing areas that will provide multiple spaces for an effective food supply chain and hybrid food systems to blossom. In doing so, they can help to increase food security for all and open the way to urban food sovereignty. There are signs of hope in this book, since some quite positive solutions are presented that demonstrate that urban land challenges can be successfully addressed in multiple ways. Some city-based experiences allow us to foresee a future in which economic growth, protection of the environment, the promotion of healthy living spaces and demographic increase can go hand in hand with the preservation and even the expansion of cultivated land and non-agricultural natural spaces, in line with adaptation to climate change. Food systems planners have a role to play in making this alternative equation possible, from the perspective of social and spatial justice in an urbanising world.

Notes

1. UN Habitat defines ‘slum’ as a contiguous settlement that lacks one or more of the following five conditions: access to clean water, access to good sanitation, sufficient living space that is not overcrowded, durable housing and secure tenure.

2. Engel’s law is an observation in economics stating that as income rises, the proportion of income spent on food falls, even if actual expenditure on food rises. In other words, the income elasticity of demand for food is between 0 and 1. The law was named after the statistician Ernst Engel (1821–96).

4. ‘Remittances include both cash and in-kind goods flow, including food. Data, knowledge, policy dialogue on food remittances are quite limited. The studies undertaken in Zimbabwe and Namibia highlighted clearly the role that food remittances play on urban food security and nutrition. Food remittances foster urban–rural links and are fundamental to the ability of the poor urban households to survive’ (Crush and Caeser 2017, 8). ‘Food Remittances: rural-urban linkages and food security in Africa’. IIED. 2017:8. Accessed 25 February 2018 http://pubs.iied.org/pdfs/10793IIED.pdf).
5. The Informal Economy Monitoring Study (IEMS) was undertaken initially at two points in time, 2012 and 2016, in 10 cities around the world: Accra, Ghana; Ahmedabad, India; Bangkok, Thailand; Belo Horizonte, Brazil; Bogota, Colombia; Durban, South Africa; Lahore, Pakistan; Lima, Peru; Nakuru, Kenya; and Pune, India. The study combines qualitative and quantitative research methods to provide an in-depth understanding of how three groups of urban informal workers – home-based workers, street vendors and waste pickers – are affected by and respond to economic trends, urban policies and practices, value chain dynamics, and other economic and social forces (Roever 2014).

References


