HLPE REPORT 19

STRENGTHENING URBAN AND PERI-URBAN FOOD SYSTEMS TO ACHIEVE FOOD SECURITY AND NUTRITION, IN THE CONTEXT OF URBANIZATION AND RURAL TRANSFORMATION

CFS COMMITTEE ON WORLD FOOD SECURITY
HLPE High Level Panel of Experts

Cover photo: Watermelons being offloaded from boats in the port of Sadar Ghat in Dhaka, Bangladesh. 2008.

Food demand is shaped by food environments, such as the physical, economic, political and sociocultural context in which consumers engage with the food system to make their decisions about acquiring, preparing and consuming food.

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FOREWORD

The High Level Panel of Experts on Food Security and Nutrition (HLPE-FSN) is the science–policy interface of the United Nations Committee on World Food Security (CFS), which is the foremost international and intergovernmental platform dedicated to food security and nutrition (FSN).

Today, more than half of the world population live in cities and this will likely reach 70 percent by 2050. This rapid demographic shift presents significant challenges for FSN and requires specific policies and actions. Moreover, over 70 percent of the world's food is consumed in urban areas. Thus, urban and peri-urban food systems have the power to shape the entire food system of their countries.

Against this background, the CFS requested that the HLPE-FSN explore the issues surrounding urbanization and rural transformation and their implications for FSN. This report responds to that request. The right to food has been the overarching principle guiding the development of the report, ensuring that every analysis and recommendation is grounded in the fundamental necessity of guaranteeing adequate and affordable food for all, without undermining social and environmental sustainability.

The report shows that, of the 2.2 billion moderately and severely food insecure people in the world, 1.7 billion live in urban and peri-urban areas. Indeed, urban and peri-urban areas are places of considerable challenges, including youth unemployment, lack of infrastructure, high levels of inequality, political instability and vulnerability to epidemics, conflicts and environmental hazards. On the other hand, these areas are also the epicentre of nutrition transition and offer economic opportunities and innovations.

As most of the food that feeds cities comes from beyond local borders, it is essential to consider the broader spectrum of logistics, transport, processing, wholesale and retail. This report provides a comprehensive overview of food systems in urban and peri-urban areas and their strengths and their challenges. It also discusses the food environment; that is, the institutional, economic and social context in which urban consumers make decisions about food. The report also highlights the many different types of urbanization in the various regions of the world.

Cities are already emerging as centres of innovation in food policy, demonstrating their potential to transform broader food systems. The action of municipalities must be developed in synchronization with governance at the regional and national levels. The report calls for a change in the governance process of urban and peri-urban food systems. Recognizing the prevalence of food and nutrition insecurity in urban and peri-urban areas, decisions must involve all the actors of the food systems, including informal ones. Clearly delineating mandates and responsibilities over the urban and peri-urban food systems will ensure not

only better coordination but also accountability. This report provides guiding principles and actionable recommendations for policymakers to improve FSN in urban and peri-urban areas by reorienting their food systems towards better nutrition, environmental sustainability and agency.

This report, like all HLPE-FSN reports, was developed through a scientific, transparent and inclusive process that involves extensive consultations and integrates diverse forms of knowledge and expertise, followed by a rigorous peer review process. I wish to express my sincere appreciation to all the experts who helped us in this long process, including the members of the HLPE-FSN Steering Committee, among them, Hilal Elver, convenor of the oversight group for this report, and the specialists from many other institutions worldwide who provided valuable feedback on earlier drafts of the report.

On behalf of the HLPE-FSN Steering Committee, I extend my gratitude to the experts who drafted the report, led by Jane Battersby. Their dedication and impressive contributions, made pro bono, were instrumental in shaping this comprehensive analysis of urban and peri-urban food systems as a compelling call to action. Special thanks go to the peer reviewers whose careful reading and insightful suggestions have significantly enhanced the final document. Finally, I would like to thank the HLPE-FSN Secretariat, and especially Paola Termine, for their tremendous support throughout the writing of this report.

This report is dedicated to the current and future residents of cities and peri-urban areas, some yet unbuilt, predominantly in Africa and Asia. I hope that this report will inspire the CFS policy recommendations and influence the way policymakers and stakeholders in cities work on food systems transformation. The decisions we make today on urban and peri-urban food systems and development will shape food security trajectories for future generations.

諏訪 明子

Akiko Suwa-Eisenmann
Chairperson of the HLPE-FSN

ACKNOWLEDGEMENTS

The HLPE-FSN of the CFS extends its sincere appreciation to all those who offered valuable contributions and provided insightful feedback during the two open e-consultations.

Considering that the HLPE-FSN reports represent independent collective scientific efforts, addressing topics requested by the CFS plenary, these insights have played a pivotal role in our working process, ensuring both legitimacy and scientific rigor, while also facilitating the integration of diverse forms of knowledge and expertise.

The first consultation, focusing on the scope of the report, received 96 insightful and sharp contributions, while the second consultation, on the "V0" draft of the report, involved 75 contributors, from diverse public and private sectors, spanning multiple fields and 50 countries. Furthermore, the collaborative nature of many contributions, often stemming from teams rather than individuals, underscored a deeper and more comprehensive involvement in the discourse.

These contributions were channelled through the FAO Global Forum on Food Security and Nutrition (FSN Forum) and are accessible on the FSN Forum website, at https://www.fao.org/fsnforum/partners/high-level-panel-experts-food-security-and-nutrition-hlpe-fsn.

The HLPE-FSN also expresses its gratitude to all peer reviewers for their invaluable feedback on the "V1" draft of the report. The complete list of HLPE-FSN peer reviewers can be found on the HLPE-FSN website, at https://www.fao.org/cfs/cfs-hlpe/en.

The following individuals also contributed, in various capacities, to this report: Emily Olsson, Anna Herforth, Preslav Tonkov, Zacc Ritter, Alireza Taghdisian, Ty Beal, Anne Marie Thow, Iromi Perera, Prabhu Pingali, Taylor Rijos and Justin Han.

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It is important to note that these reports are considered global public goods. All the experts involved work on a pro bono basis, and the process is funded entirely through voluntary contributions.

The HLPE-FSN expresses its gratitude to the donors who have contributed to the Trust Fund since 2010 or provided in-kind contributions, enabling the panel's work while fully respecting its independence. Since its establishment in 2010, the HLPE-FSN has received support from the following countries and donors: Australia, China, Ethiopia, the European Union, Finland, France, Germany, Ireland, Monaco, New Zealand, Norway, the Province of Quebec, the Russian Federation, Slovakia, Spain, the Sudan, Sweden, Switzerland and the United Kingdom of Great Britain and Northern Ireland.

ABBREVIATIONS

CFS	Committee on World Food Security
DEGURBA	degree of urbanization
DQQ	diet quality questionnaire
FAFH	food away from home
FAO	Food and Agriculture Organization of the United Nations
FCV	fragility, conflict and violence
FSN	food security and nutrition
HIC	high-income country
HLPE	High Level Panel of Experts on Food Security and Nutrition (also known as HLPE-FSN)
LMIC	low- and middle-income country
MUFPP	Milan Urban Food Policy Pact
NGO	non-governmental organization
OECD	Organisation for Economic Co-operation and Development
SDG	Sustainable Development Goal
SES	socioeconomic status
SOFI	State of Food Security and Nutrition in the World
U-PU	urban and peri-urban
UN	United Nations
UPA	urban and peri-urban agriculture

EXECUTIVE SUMMARY

Over 60 percent of the world's population lives in urban areas and rapid urbanization is causing shifting geographies. **Currently, 1.7 billion of the world's 2.2 billion people experiencing moderate or severe food insecurity live in urban and peri-urban (U-PU) areas** (Figure 1). Although urban areas have a lower prevalence of stunting compared to rural areas, further disaggregation of urban areas by poverty shows that urban poor have very high stunting rates, as high as those in rural areas. The ability of U-PU residents to realize their right to food is a critical challenge, particularly in the context of climate change, political instability, increased inequality, internal conflicts and rapidly increasing urban populations. National food security and food system policies have neglected U-PU food security and nutrition (FSN) and largely ignored the role of local governments in shaping food systems and FSN outcomes. **There is an urgent need to redirect food security and food system policy and investment to address this growing challenge**.

Recognizing this, the United Nations Committee on World Food Security (CFS) determined that an in-depth analysis of U-PU food systems was needed to ensure that the right to food, and food security and nutrition in all its six dimensions (HLPE, 2020), are met. To this end, the CFS requested that the High Level Panel of Experts on Food Security and Nutrition (HLPE-FSN) develop a report culminating in a set of focused and action-oriented policy recommendations on strengthening U-PU food systems in the context of urbanization and rural transformation, as a key means of achieving the CFS vision,[1] (CFS, 2009) SDG 2 and an array of other SDGs, including SDGs 1, 10 and 11.

This report, *Strengthening U-PU food systems to achieve food security and nutrition in the context of urbanization and rural transformation*, developed by the HLPE-FSN, is based on the outcomes of the CFS Open-Ended Working Group (OEWG) on Urbanization, rural transformation and implications for food security and nutrition, and on recent literature and policy debates. Drawing from this report, CFS will develop policy recommendations on U-PU food systems, taking into account the specific needs of diverse rural and urban contexts and the linkages between them.

In light of these objectives, this report: (i) assesses the existing situation and identifies the main bottlenecks in achieving food security and nutrition in U-PU areas; (ii) highlights the linkages between U-PU food systems and other systems, such as water, energy and mobility, and their impact on achieving food security and nutrition; (iii) investigates the ways in which U-PU food systems can be transformed and made more equitable, accessible, sustainable and resilient through interventions in food system activities and food environments; and (iv) lays out policy recommendations that take into account multiple actors and policy levers.

[1] According to the Reform document of the Committee on World Food Security, "The reformed CFS as a central component of the evolving Global Partnership for Agriculture, Food Security and Nutrition will constitute the foremost inclusive international and intergovernmental platform for a broad range of committed stakeholders to work together in a coordinated manner and in support of country-led processes towards the elimination of hunger and ensuring food security and nutrition for all human beings. The CFS will strive for a world free from hunger where countries implement the voluntary guidelines for the progressive realization of the right to adequate food in the context of national food security." Committee on World Food Security (CFS), Reform of the Committee on World Food Security, U.N. Doc. CFS:2009/2Rev. 2. October, 2009. Rome (also available at https://www.fao.org/4/k7197e/k7197e.pdf).

The report includes eight chapters. **Chapter 1 provides the rationale for focusing on U-PU areas, explains the conceptual underpinnings of the report and presents the theory of change**. The chapter demonstrates that over three-quarters of the world's food-insecure population lives in U-PU areas. It describes the important influence that formal and informal power structures, policies and legislation have on U-PU food insecurity, leading urban residents to have different levels of realization of the right to food and differential access to urban services and infrastructure. It further describes the need to reinforce the fundamental right to food and the right to the city – meaning equitable and inclusive access to goods and services for a decent life – as essential for tackling unequal food access. Given that food insecurity in U-PU areas is shaped by economic, political, spatial and social processes within and beyond these areas, the chapter also highlights the need for specific interventions designed and implemented by both national and local governments.

Chapter 2 demonstrates how the process of urbanization shapes food security, dietary choices, nutrition and food systems governance in U-PU areas. It **highlights the importance of understanding the context of a given urban or peri-urban area** in terms of location, size and degree of informality when developing policy and governance responses. This chapter draws particular attention to the ways that U-PU areas concentrate vulnerabilities along several dimensions which impact food security, including climate related challenges, conflict and inequality. It calls for **improving U-PU resilience as a critical entry point for improving U-PU FSN**.

Chapter 3 outlines the challenges and opportunities presented by key U-PU food system activities to improve U-PU food security and nutrition. The activities addressed are: food production and trade; midstream supply chain activities, including transport, logistics, processing, and wholesale; downstream activities, including retail and service (both market and non-market food sources); and loss and waste. Given that U-PU food systems include elements, activities and actors operating within and beyond U-PU areas (from rural hinterlands to distant countries), they are complex to govern. The chapter highlights the **importance of maintaining food system diversity, including traditional and informal components, to ensure food system resilience and food security and nutrition**. This requires identification and management of both synergies and trade-offs (for instance, between food safety and food affordability) across these diverse components.

Chapter 4 uses the entry point of the food environment to demonstrate how food consumption patterns in U-PU areas are shaped by the interactions of the food system with other systems, including housing, water and energy, and by socioeconomic status. U-PU diets and food-sourcing strategies vary significantly, not only by income but also by other individual and household characteristics. The chapter demonstrates that the **factors shaping food choice within U-PU food environments extend beyond food-system issues and, therefore, require a broader suite of interventions**. These include addressing time poverty, energy poverty and infrastructure deficiencies, as well as employment and livelihood stability.

Chapter 5 provides data on the state of U-PU FSN. These FSN outcomes are framed as consequences of the systemic issues addressed in chapters 1 through 4. It highlights the high prevalence of food insecurity and malnutrition in U-PU areas. **Food insecurity is unevenly distributed within U-PU areas, with slums and peri-urban areas having the highest incidence and women, children, marginalized ethnic groups and migrants disproportionately affected**. Food safety challenges concentrate in poor U-PU areas. Although urban diets are typically more diverse than rural diets, they are typified by higher consumption of ultra-processed foods and food away from home.

Considering the findings presented in previous chapters, **Chapter 6** provides an analysis of the governance challenges and opportunities associated with U-PU FSN. It finds that **the complex nature of U-PU food systems makes it essential to work through multilevel,**

multisectoral, multilateral and multi-actor governance processes within and beyond the state. This may include national governments co-developing food security strategies with local governments, development of multidepartmental food working groups at local government level and food-policy councils. The chapter notes the need for contextual governance responses and the need to take particular care to avoid reinforcing power asymmetries common in multi-actor platforms.

Chapter 7 presents **six clusters of policy instruments, which when combined can form integrated strategies. These are: regulatory policy; fiscal tools; transfer instruments; market policies; investments; and behaviour change policies aimed at shifting the preferences and decisions of the population**. The chapter provides examples of good practice in urban food governance. These policy instruments provide the governance entry points that frame the report's **recommendations in Chapter 8**.

THEORY OF CHANGE

The report's theory of change (Figure 2) argues that in the context of urbanization and rural transformation, improving U-PU food security and nutrition across all six dimensions requires addressing food system drivers as well as other interacting systems and drivers of FSN outcomes.

The direction of change across each of these drivers must be informed by the principles of the right to food and the right to the city. The report identifies five interacting drivers of change within U-PU contexts to shape FSN outcomes. The nature of these interactions and the relative importance of each driver is context specific, and pathways to change must be via context informed, integrated policy tools. This requires a commitment to improved data gathering and disaggregation and research for FSN to better understand U-PU FSN drivers and outcomes. This will support evidence-based decision-making as well as monitoring and evaluation of policies and programmes.

The first driver of change is strengthened U-PU food systems. Informed by the underlying principles of the theory of change, actions to strengthen food systems should be based on building food systems that are equitable, just and inclusive; productive and prosperous; participatory and empowering; resilient; regenerative and respectful to ecosystems; and healthy and nutritious.

The second driver of change is the development of more equitable U-PU environments. This focuses on addressing the long-term structural drivers of unequal FSN outcomes. Actions should focus on redressing spatial, economic and infrastructural inequities in U-PU areas which undermine FSN.

The third driver of change is reducing poverty and inequality for residents within U-PU areas. This focusses on addressing the immediate impacts of the structural inequalities described above experienced at the individual and household level. Actions at the individual and household level should focus on multidimensional poverty, social protection and livelihoods.

The fourth driver of change is strengthened governance of food systems and other systems in U-PU areas. Actions should focus on national governments' acknowledgement of and respect for the mandates of local/city and subnational government in shaping food systems; providing support to local governments to enable them to act on these mandates; providing investment to address the challenge of weak and fragmented local government; and investing in multilevel, multilateral and multi-actor governance processes.

The final driver of change is improved U-PU resilience. Resilience is understood as the ability to resist, absorb, recover and reorganize in the context of shocks and crises. The impact of shocks and stresses is asymmetric across people and places. Actions to increase resilience in U-PU food systems and other systems should redress asymmetric vulnerabilities and impacts at the same time as building system-wide resilience.

CONCLUSIONS AND RECOMMENDATIONS

The recommendations of this report aim at improving all dimensions of U-PU FSN and ensuring consistent and affordable access to healthy diets, particularly in the event of shocks. This depends on strengthening U-PU food systems and related non-food systems, which requires appropriate governance and policy approaches, informed by the U-PU context. Given the nature of U-PU food systems and the many factors driving their transformation, efforts to govern such systems should be multilevel, multisectoral and multi-actor, and should be informed by the principle of reinforcing fundamental rights to food and to the city.

Given that food-system activities within U-PU areas are governed by different levels of government and take place along the rural–urban continuum, mechanisms for alignment across levels of government are essential to ensuring policy coherence and effective resource use. Multilevel governance approaches are therefore essential. Similarly, food system and FSN outcomes in U-PU areas are shaped by factors beyond the food system and therefore require multisectoral governance approaches. Finally, actors from within food systems must be included in governance processes to enable them to be active agents in transforming food systems. It is essential that these multi-actor processes have principles of equitable inclusion embedded within them.

The right to food and the right to the city should be integrated in all measures addressing food insecurity in U-PU contexts. This means: recognizing interrelated, interconnected and indivisible human rights; recognizing the obligations of states, local authorities and the private sector and the rights and responsibilities of civil society; implementing human rights, specifically the right to food, in order to transform U-PU food systems at the local level; and integrating human rights-based approaches in city-level governance, for instance in statutes, planning and programmatic documents.

Policy initiatives should uphold the right to food and other human rights, such as the right to life, health, water, education and adequate housing, which in the urban context can be articulated under ensuring the right to the city. Specific measures should include access to spaces for cultivation in the city, public participation in the design and use of urban spaces and the provision of public spaces for food vendors.

A central consideration for those making use of these **recommendations is that they should be considered through the unique context of the urban/peri-urban setting, in terms of the size and location of the setting, existing infrastructure, the age, other demographic and socioeconomic status of the residents, and fragility to conflicts and other crises**. The degree of decentralization, intergovernmental political economy, strength of civil society and strength of public service represent other distinguishing factors that necessitate policy differentiation. Further, different policy instruments should be used in combination to develop integrated strategies.

It is essential to support and strengthen local and territorial aspects of U-PU food systems, with particular attention to small-scale and informal actors. However, it is important to note that many U-PU residents, particularly those most vulnerable to food insecurity in many low and middle-income countries, will continue to depend on food from elsewhere. It is therefore important that trade and supply chain policies be directed towards increasing access to healthy diets for U-PU residents. Further, policies to localize the system should be mindful of the impacts of U-PU food system interventions on people and places outside of U-PU areas. Therefore, trade policies that undermine local food systems should be discouraged. These policies must be embedded in a broader understanding of how and to what degree growing corporate concentration in the global food system affects the capacity of U-PU governments to deliver healthy diets to their residents.

Maintaining and increasing diversity within U-PU food systems (diversity of retail types

and locations, of modes of access to food, of pathways from production to consumption, of sources of food and of types of food) is essential to ensure food security and nutrition for U-PU residents and to build systemic resilience to shocks. **The crucial role of informal-sector actors in providing vulnerable U-PU residents access to affordable food, particularly in the context of low- and middle-income countries (LMICs), must be carefully assessed and addressed**. Central to this is the need to improve food safety across all food system activities, while ensuring the mitigation of trade-offs between promoting food safety and regulations and the potential negative impacts on informal segments and actors within food systems.

These broader considerations underpin the following recommendations.

A. URBAN AND PERI-URBAN FOOD SYSTEMS FOR FSN

Interventions in U-PU food systems should be oriented towards creating food systems that are: equitable, just and inclusive; productive and prosperous; participatory and empowering; resilient; regenerative and respectful to ecosystems; and healthy and nutritious. This requires action across all components of food systems.

1. Production: Local governments, together with other subnational government actors (provincial, county, etc.), should formulate and encourage provisions to protect and promote sustainable food production that applies agroecological principles and other innovative methods, in urban and peri-urban areas, through:

- land-use zoning to protect urban agriculture, livestock and fishing activities;
- prioritizing access to land, water, innovation and technology, and finance to projects that support urban livelihoods, address the needs of the most food-insecure and promote sustainable practices;
- support for territorial systems and shorter supply chains to facilitate market access to urban and peri-urban producers and increase accessibility of fresh produce for U-PU residents; and
- partnering with civil society and research organizations to provide extension services to U-PU farmers and producers, promoting regenerative and nutrition-sensitive practices.

2. Trade: National governments, together with local government actors, should work to ensure that trade regulations and policy are oriented towards increasing access to and affordability of healthy diets, with a particular focus on poor families, protecting U-PU populations from the increasing availability and targeted marketing of unhealthy foods and protecting the interest of small-scale and informal operators. This will include the following actions:

- Include local government in national dialogues on food-trade policy to raise awareness about the specific needs and contributions of U-PU food systems to the national economy and to FSN. Strengthen the capacity of urban food-policy actors to engage with trade- and investment-policy stakeholders.
- Consider the implications of trade policies on poor and food-insecure U-PU consumers.
- Assess the role of the informal-sector in cross-border trade and integrate provisions in policy to support and protect cross-border trade from harassment and extortion.

3. Midstream: Addressing the midstream activities (storage, processing, transportation and wholesale) in urban food supply chains is essential for creating equitable and efficient food policies that benefit all stakeholders in the supply chain. National and local government and private sector actors should work together to:

- encourage both public and private investment in infrastructure, logistics, innovation and technology, and capacity-building in the intermediary sector of urban food value chains, particularly for fresh and perishable foods;
- foster diversity of midstream food actors through mechanisms to support small-scale and informal-sector actors, including the development and maintenance of public food infrastructure (for example wholesale, traditional and digital markets), and ensuring fair supply chain practices to redistribute value;
- ensure that food systems' planning codes and regulations include informal processors operating in U-PU areas; and
- support wholesale markets to strengthen connections with small-scale producers, leveraging them to increase access to affordable, diverse and healthy diets.

4. Markets and retail: National and local governments, in accordance with their respective functions, should:

- strengthen different types of markets and retailers (wholesale, traditional, wet, weekly) in U-PU areas to enable access to healthy and affordable foods and promote livelihoods of food systems' workers;
- protect and sustain traditional markets, incentivizing investment in infrastructure, operations, logistics, innovation and technology, and access to water and energy, and fostering closer links between traditional markets and small-scale food producers and local communities;
- work with market traders and street vendors to improve food safety by (i) creating an enabling environment (where local and national authorities support food safety through investment in basic infrastructure, policy and regulation, capacity building and monitoring and surveillance activities); (ii) providing appropriate training and technology for value chain actors; (iii) providing incentives for behaviour change;
- incentivize the sale of healthy and sustainable food, while disincentivizing unhealthy food and food that is harmful to the environment, through appropriate legal and regulatory instruments, such as taxes and subsidies, warning labels, food licenses, preferential trading locations for vendors selling healthy food and zoning restrictions on the marketing and sale of unhealthy foods;
- provide incentives for the establishment of outlets for healthy foods in underserved areas, encouraging food retail diversity;
- prioritize, together with private sector actors, support for innovation and technologies for small businesses and projects that connect consumers to smallholder farmers through apps and delivery services, such as community-supported agriculture (CSA) programmes; and
- promote behaviour change towards healthier food consumer choices through targeted education and awareness raising, informed by the structural drivers of food choice, which can include front-of-pack labelling, public education campaigns and taxation of unhealthy foods.

5. Public procurement and non-market initiatives: In addition to strengthening markets, non-market food sources and enablers, such as public procurement, community kitchens and remittances, should also be supported and developed for the benefit of the most vulnerable population groups and to provide buffer in times of crises. National and local governments should:

- invest in nutrition-oriented public procurement programmes, specifically targeted at vulnerable populations within U-PU populations;
- prioritize local, agroecological and small-scale farmers in public procurement programmes, particularly within school feeding programmes and programming aimed at nutrition in the first 1 000 days;

- develop local by laws that support the decentralized development of food banks and community kitchens, as well as deferral of surplus food to food banks, community kitchens and other food distribution programmes, informed by principles of dignity and agency; and
- strengthen the role of civil society organizations in providing food aid in times of crisis, harnessing their capacity to reach vulnerable populations.

6. Food loss and waste: Local governments, in collaboration with market associations, private sector actors, resident associations and individual establishments, should strive towards minimizing food loss and waste. This could be achieved by:

- providing supportive infrastructure (shading, cold storage units) and access to innovation and technology to informal-sector actors to increase fresh food access, preserve vitamins and minerals in perishable foods, and reduce food loss and waste;
- providing restaurants with guidelines, training and resources to reduce food waste;
- creating awareness among consumers to reduce food waste; and
- promoting and supporting circularity through composting, biogas digestion, using food waste to feed livestock, donating surplus food to food redistribution programmes, etc.

B. URBAN AND PERI-URBAN NON-FOOD SYSTEMS THAT IMPACT FSN

Food security and nutrition are affected not only by food systems, but also by related systems such as health, education, housing, water, energy, infrastructure and finance systems. In U-PU areas spatial inequality and unequal access to services are important drivers of poor FSN outcomes. It is critical to adopt a holistic approach with policies targeting key actions in these other systems in order to address U-PU poverty and inequality.

National and subnational government, together with private-sector actors and civil society organizations should:

- ensure that infrastructure investments, including for transport, are equity sensitive and are inclusive of informal-sector actors and food-insecure consumers;
- explicitly integrate food into urban planning, including incorporation of food sensitive planning and design principles;
- integrate food trade infrastructure in transport planning to facilitate the sale of healthy meals to commuters;
- incorporate food security planning into housing and zoning policy;
- establish financial mechanisms, such as microcredit or subsidies, to assist small-scale producers and food-system actors in acquiring inputs and technology;
- incentivize investment towards low-income residents and neighbourhoods for the provision of water, sanitation, waste management and reliable energy to enable healthy diets, safer food handling and washing, and the preparation and cooking of meals at home;
- enhance decent work and employment in U-PU food systems, including by providing childcare spaces within traditional markets, promoting occupational safety and health and guaranteeing labour rights;
- strengthen urban health services (including neonatal and infant nutrition guidance and prevention diagnostics) for FSN outcomes;
- acknowledge temporal variation in U-PU food insecurity and frame social protection policies and programmes to be responsive to periods of heightened food insecurity;
- develop and invest in social protection programmes targeting specific U-PU contexts; and
- promote nutrition in health services, particularly for women of childbearing age and pregnant and breastfeeding women, and in paediatric services, informed by the lived experience of U-PU residents.

C. URBAN AND PERI-URBAN GOVERNANCE FOR FSN

Addressing U-PU FSN requires shifts in governance approaches at the national and local levels, recognizing the prevalence of U-PU food insecurity. This recognition should drive investment and governance approaches that are inclusive of subnational governments and incorporate a broad range of voices from civil society, research institutions and the small-scale private sector. It is essential to prevent and mitigate the negative effects of concentration in food supply chains on urban livelihoods and to promote the accessibility and affordability of diverse, sustainable and healthy diets in urban areas. This entails promoting policies that foster competition and diversification within these supply chains.

National governments should:

- increase financing and capacity of local and urban governments, particularly in LMIC contexts, to tackle urban food system challenges, and identify and promote innovative approaches for mobilizing resources (such as municipal bonds), while also ensuring sufficient municipal staff with holistic skills to address food-system challenges;
- include local and subnational government in the development of national policies that are relevant to the food system, inclusive of agriculture, nutrition, environment, gender and trade policy; and
- ensure financing is adequate and coherent with municipal mandates.

National and local government should:

- identify the mandates of different levels of governance in shaping FSN and food systems in U-PU areas, and ensure that U-PU food system policy is multilevel, multisectoral and multi-actor;
- clearly delineate the mandates and responsibilities over the urban food system across different tiers of government and other sectors (health, education, urban planning, infrastructure, etc) to ensure accountability for action to urban residents (including through stakeholder mapping to assess responsibilities, available instruments, and financial and human resources); and
- ensure coherence and coordination of policies and programmes within urban departments and across levels of government and sectors, including through urban food strategies; joint, integrated food-policy offices and strategies; coordinated urban food units; or multistakeholder platforms.

National government, local government, civil society organizations and private sector actors should:

- develop inclusive multi-actor platforms to encourage the active participation of local communities in decision-making processes, including through building their capacity to effectively engage and addressing inherent power imbalances; and
- build capacities of urban food system actors (especially the underrepresented, such as traditional market trader associations and consumer associations) to enable stronger representation.

D. URBAN AND PERI-URBAN RESILIENCE AND SUSTAINABILITY

U-PU food systems, and U-PU areas more broadly, are increasingly vulnerable to shocks and crises. The impacts of these are unequally experienced and often increase U-PU inequality. There is a need for proactive planning to reduce vulnerabilities and increase systemic resilience. Resilience planning should be informed by the lived experience of vulnerable populations, should include civil society organizations, and should make use of practices with proven impact on household and community resilience.

National and local government should:

- develop U-PU food system resilience plans and establish contingency planning and early warning systems for fragility and shocks;

- identify critical food infrastructure to be prioritized in times of crisis, and populations and areas most vulnerable to food insecurity in times of disaster and shocks;
- embed resilience thinking into urban planning and design;
- include food system support in disaster-response funding plans at all levels, from national to local;
- maintain and enhance food-system diversity – in terms of sources, supply chains and retail typologies – to bolster systemic resilience, considering the impact of U-PU food system decisions on resilience in rural hinterlands and beyond;
- integrate food into climate-adaptation plans.

E. DATA, RESEARCH AND KNOWLEDGE FOR FSN

There is a need for more granular, U-PU specific FSN data and research. Evidence-based decision-making needs targeted data collection, management, analysis and dissemination across food system actors and system interactions.

National and subnational government, in partnership with academia and civil society, should:

- develop U-PU specific FSN data tools;
- add a specific food security module to city household surveys;
- invest in information technology and digital systems to improve the evidence base for policymakers and food system actors to plan, prioritize, design and track food system activities;
- ensure finer grained disaggregation of data (along the urban–rural continuum, city size, intra-city), to allow analysis of intersectional vulnerability;
- incorporate qualitative data into U-PU food policy;
- use geographic information systems, remote sensing, digital tools and participatory mapping to identify areas most vulnerable to food-system disruption to inform long-term planning and crisis response;
- invest in monitoring and evaluation of food policies and programmes, including non-food specific impacts (such as economic development and environmental sustainability); and
- invest in and learn from city food networks as a mechanism for sharing knowledge and training and for increasing local government voice in national and international policy spaces.

CHAPTER 1
INTRODUCTION

Street scene in Hanoi, Viet Nam, 2012. Maintaining food system diversity, including traditional and informal components, is important to ensure food system resilience and food security and nutrition.

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KEY MESSAGES

- Over three-quarters of the world's moderately and severely food-insecure population live in urban and peri-urban areas.
- Food insecurity and malnutrition in urban and peri-urban areas are shaped by food systems and other systems within these areas (housing, water, energy, sanitation, waste and transport).
- There is an urgent need to redirect food-security and food-system policies and investments to address this growing challenge.
- Efforts to strengthen urban and peri-urban food systems, food security and nutrition must be multilevel, multisectoral and multi-actor, and must be informed by the right to food and the right to the city.

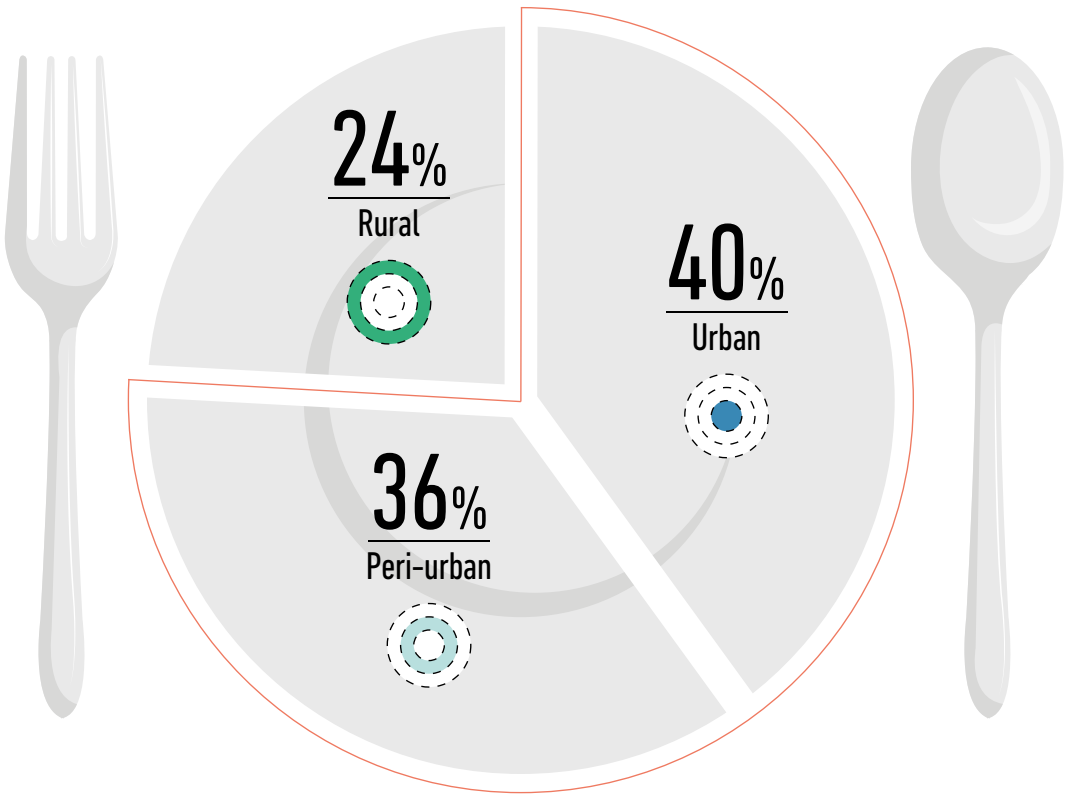
1.1 URBAN CONTEXTS AS A CRITICAL ENTRY POINT FOR FOOD POLICY

Feeding and nourishing cities is set to be one of the defining challenges of the twenty-first century. Ensuring that urban residents have sufficient access to safe, healthy, nutritious, culturally appropriate, adequate and affordable food that does not undermine sustainability requires urgent policy and governance attention. The ability of urban and peri-urban (U-PU) residents to realize their right to food is a critical challenge, particularly in the context of climate change, political instability, increased inequality and rapidly increasing urban populations.

Over 50 percent of the world's population already lives in urban areas, and this proportion is expected to increase to over 70 percent by 2050 (United Nations, 2023a). If peri-urban areas are included, 79 percent of the total world population (that is, 6.2 billion people) currently resides in U-PU areas. Approximately 1.1 billion people currently live in slums or slum-like conditions in cities, with 2 billion more expected to live in such conditions in the next 30 years (United Nations, 2023a, p. 34). Food insecurity is a pressing and urgent problem in U-PU areas. Over three-quarters of the individuals experiencing moderate or severe food insecurity in the world reside in U-PU areas (FIGURE 1). In other words, **of the 2.2 billion moderately and severely food-insecure people in the world, 1.7 billion live in U-PU areas.** High U-PU food insecurity is reflected in all regions of the world, but it is particularly pronounced in Asia. Thus, while a higher proportion of rural residents are food insecure than U-PU residents, in absolute terms, the weight of food insecurity falls largely on the shoulders of urban and peri-urban residents (FAO *et al.*, 2023a). Similarly, child stunting, an indicator of chronic malnutrition, is proportionally lower in urban areas (22 percent) compared to rural areas (36 percent) (FAO *et al.*, 2023a); however, further disaggregation of urban poor areas reveals that stunting rates among the urban poor are as high as they are in rural areas in many low- and middle-income countries (LMICs) (including Bangladesh, Guatemala, Haiti, India, Nepal, Pakistan, the United Republic of Tanzania and Uganda) (Assaf and Juan, 2020). Further, due to higher populations in U-PU areas, numerically, many more children suffer from stunting in U-PU areas than in rural areas. Anaemia also exhibits a similar pattern with the disaggregation of urban poverty. Meanwhile, multiple burdens of malnutrition are also higher in LMIC peri-urban and urban areas than rural areas, especially affecting women and children. Given demographic trends, it is likely that U-PU food insecurity and poor nutrition outcomes will continue to increase. Therefore, while food insecurity and malnutrition remain a critical challenge in rural areas, there is a growing need to also focus attention on the growing challenge

of U-PU food insecurity. There is evidence that diets, dietary behaviour and related health outcomes may be poorer in urban LMIC settings than in rural LMIC settings (Westbury *et al.*, 2021). This requires new sets of governance and policy approaches, as **U-PU food insecurity and malnutrition should not be understood simply as food insecurity that occurs within U-PU areas, but, rather, as food insecurity and malnutrition that is shaped by food systems and by urban systems and their relationships to rural areas** (Moragues-Faus and Battersby, 2021). These urban systems include housing, water, energy, sanitation, waste and transport.

FIGURE 1
DISTRIBUTION OF MODERATELY AND SEVERELY FOOD-INSECURE POPULATION ALONG THE RURAL–URBAN CONTINUUM, 2022



Source: FAO. 2023a. Suite of Food Security Indicators. In: *FAOSTAT.* Rome. [Cited 27 February 2024]. https://www.fao.org/faostat/en/#data/FS

Many future urban residents, predominantly in Africa and Asia, will be living in cities and peri-urban areas as yet unbuilt. The decisions made around urban food systems and urban development today will shape food security trajectories for future generations (Pieterse, Parnell and Haysom, 2018). Urban areas are sites of considerable challenges (including youth unemployment, political instability, accumulated poverty, infrastructural deficiencies and environmental hazards), but also sites of innovation and economic opportunity. Careful planning is required to harness the opportunities, while minimizing the challenges.

It is also clear that urban food demands are profoundly shaping food systems, causing social,

environmental and political impacts across the globe (FAO *et al.,* 2023a; de Vos *et al.,* 2024). Over 70 percent of the world's food is consumed in urban areas (FAO, 2019a). Additionally, urban diets usually have greater environmental impacts than rural diets, typically including more animal protein and highly processed foods. Urbanization is driving the overall growth of urban food demand and is shaping purchasing power and food preferences. This drives increasingly complex food value chains and has direct and indirect land-use-change impacts (de Bruin, Dengerink and Van Vilet, 2021).

National food security and food system policies have neglected U-PU food security and nutrition (FSN) and largely ignored the role of local governments in shaping food systems and FSN outcomes. Food insecurity in U-PU areas is not only increasing but has unique characteristics and requires U-PU-specific modes of analysis and response. **There is an urgent need to redirect food security and food system policies and investments to address this growing challenge.**

Within the last decade there has been a significant increase in interest in urban food governance across a range of United Nations (UN) agencies, non-governmental organizations (NGOs) and local governments (Forster *et al.,* 2023). The New Urban Agenda, adopted by the United Nations as a framework for urban development, explicitly identifies food security, nutrition and food systems as urban issues, and states that food security is both a crucial urban sustainability challenge to be addressed and an urban public good (UN-Habitat, 2017). This provides entry points for national and local governments to proactively focus on urban food security, nutrition and food systems. There are now multiple consortia working on urban food-system issues, including the Coalition on Sustainable and Inclusive Urban Food Systems, the Milan Urban Food Policy Pact, the International Coalition for Territorial Food Systems Governance, and the Transitioning Urban and Rural Food Systems Consortium. The 2023 UN Food Systems Summit Stocktaking conducted two dedicated urban food-system events. The growing urgency to act, coupled with the growing interest in urban food systems, suggests this is the ideal moment for the Committee on World Food Security (CFS) and policy actors to turn their attention to strengthening U-PU food systems.

1.2 THE NEED TO STRENGTHEN U-PU FOOD SYSTEMS FOR IMPROVED FOOD SECURITY AND NUTRITION

Efforts to strengthen U-PU food systems must be made with an understanding of the historical context and continued evolution of urban food systems and their role in national and urban political development. **Urban food systems did not develop into their current form randomly: Food was often used by national and local governments as part of a system to control spaces, populations, political tendencies and economic opportunities** (Virloulet and Marin, 2004).

From the earliest cities, food systems were oriented towards maintaining a supply of affordable, basic food for the urban population (Steel, 2008), **to the disadvantage of rural populations, sometimes through formal subsidization, but more often by shaping food system conditions to meet this need.** The provision of cheap, basic foodstuffs to urban populations was a political necessity to prevent civil unrest as well as a demand on the part of urban employers to enable them to keep wages low (Bricas and Conaré, 2019; Duminy, 2022). This can be traced as far back as the provision of the Annona (grain dole) in Ancient Rome (James, 2021) and, more recently, the repeal of the Corn Laws in England to reduce import tariffs to support cheap food for cities during the Industrial Revolution (Wordie, 2000). Even more recently, in Latin America (Barraclough and Utting, 1987), Africa (Pearce, 1991) and the Middle East and North Africa region, urban food subsidies were a common state practice until the imposition of structural adjustment programmes. **Over time, this imperative to maintain a supply of affordable**

food for the urban population led to a set of regulatory tools to control food production, processing, sale and consumption (Deener, 2020; Toriro, 2021), all the while neglecting urban food systems in policy discussions.

This trend, combined with consistently growing urban demand for large volumes of staple crops and animal protein, as well as demands from a rising urban consumer class for more diverse foodstuffs, shaped the wider food systems beyond urban areas, precipitating, among other changes, a move to larger, monocrop farms; the development of agricultural marketing boards; the development of new food preservation techniques; the growth of distant markets; and land evictions in rural areas. The resulting transformations and structural changes in rural areas, including the replacement of agricultural labour with mechanization, led to the loss of land, job losses and high levels of food insecurity among rural populations. This, in turn, accelerated urbanization, which further increased urban demand (Arslan, Cavatassi and Hossain, 2022). The key finding is that various rates of rural transformation of the past led to uneven results for nutrition outcomes (Arslan, Cavatassi and Hossain, 2022).

In the wake of structural adjustment programmes in the 1980s and 1990s many of the policies that explicitly and implicitly favoured urban centres in the LMIC contexts fell away (Riddell, 1997; Moseley, 2001), but the market-driven processes designed to stimulate and meet urban food needs have continued to shape food security outcomes.

The cumulative impact of these long-term food system trends is that current urban food systems, like the larger national and regional food systems within which they operate, are not fit for purpose. Levels of food insecurity in urban areas are high. There are increasing rates of the multiple burden of malnutrition in urban areas and, consequently, of diet-related non-communicable diseases (Westbury *et al.*, 2021). It is increasingly evident that food systems in U-PU areas, historically configured to ensure the availability and affordability of basic foodstuffs, are not providing adequate access to healthy diets (FAO *et al.*, 2023a). Additionally, the efforts to feed urban populations have led to the dominance of a food-systems logic

TABLE 1
SUSTAINABLE FOOD-SYSTEM PRINCIPLES AND OUTCOMES

PRINCIPLE	
Equitable, just and inclusive	Ensure the right to food, wherein all people have access to adequate food and livelihoods
Productive and prosperous	Ensure the availability of adequate and affordable food
Participatory and empowering	Ensure agency for all people and groups to make choices and exercise their voice in shaping the system
Resilient	Ensure stability in the face of shocks and crises
Regenerative and respectful to ecosystems	Ensure sustainability in all its dimensions
Healthy, safe and nutritious	Ensure nutrient uptake and utilization

Source: Adapted from HLPE. 2020. *Food security and nutrition: building a global narrative towards 2030.* A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome. https://www.fao.org/3/ca9731en/ca9731en.pdf

that focuses on the production of staples, on large-scale production, on reliance on imports of cheap staples and on the marginalization of small-scale and informal actors in LMIC contexts. This report will demonstrate that U-PU food systems are currently unsustainable, unjust, nutritionally unbalanced and prone to shocks.

There is a need to transform U-PU food systems, both in the interest of improving U-PU FSN and to address the negative externalities of existing food systems. This report builds on the sustainable food-system principles established by the HLPE-FSN (2020) and situates them within U-PU contexts (TABLE 1). These principles establish the direction of change required for U-PU food systems to be strengthened in order to improve FSN. If the food systems are transformed along the lines of these principles, there will be food-system benefits within and beyond U-PU regions.

1.3 CORE CONCEPTS

It is within this context that the report focuses on strengthening U-PU food systems for FSN, in the context of urbanization and rural transformation. At the core of the report is the relationship between U-PU food systems and U-PU FSN outcomes. In this report, the intended outcome of strengthening and transforming U-PU food systems is, primarily, improved FSN.

Further, the report views urbanization and the urban as critical actors in shaping both FSN and food systems.

The framing of the report rests on these core concepts: urban and peri-urban; U-PU food security; U-PU food systems; the right to food and the right to the city; and governance. Each of these concepts is discussed in this section (and presented in the glossary for ease of reference).

1.3.1 URBAN AND PERI-URBAN

In this report, U-PU are conceptualized not simply as locations where food insecurity and malnutrition manifest and where food-system activities take place, but as active agents in shaping the characteristics of FSN, food-system activities and their governance.

The urban is viewed as a physical space, but also as a site of politics, a site of economic activity and livelihoods, a location where the presence or absence and distribution of infrastructures shapes urban form and function, and a space in which social relationships shape systems and governance. Importantly, the urban is recognized as a space where there are important flows of materials, energy and resources within and beyond its borders. The U-PU must therefore be viewed in a set of dynamic relationships with other local and global areas, rather than in isolation.

BOX 1

THE CHALLENGE OF DEFINING URBAN AND PERI-URBAN

Countries use a range of approaches to define urban, some basing it on administrative functions, others on population size or density, or combinations of these with other criteria (UN-Habitat, 2020).

There have been attempts to consolidate single definitions of urban to allow comparison and data tracking across countries. For example, the Africapolis database of African cities used by the Organisation for Economic Co-operation and Development (OECD) has a standard definition of cities as contiguously built-up areas (with gaps of less than 200 metres between individual buildings) with at least 10 000 inhabitants (OECD/UN ECA/AfDB, 2022). However, any standardized definition becomes less functional the more global the application is. For example, using population size as a criterion is challenging. In Denmark, for example, an area with a population of over 200 is considered urban, whereas in Japan, a city is an area with a population of 50 000 or more (UN-Habitat, 2020).

The most recent attempt to develop a global typology to enable international statistical comparisons is the UN Statistics Commission's Degree of Urbanisation (DEGURBA) tool which classifies the entire territory of a country along the urban–rural continuum, rather than the traditional urban–rural divide. The approach also allows the identification of functional urban areas of cities, composed of a city plus its surrounding, less densely populated local units that are part of the city's labour market (the "commuting zone") (UN Statistical Commission, 2020). Another recent tool is the Global Urban Rural Catchment Area, used in the 2023 State of Food Security and Nutrition in the World (SOFI) report (FAO *et al.,* 2023a).

The DEGURBA tool has utility due to its simplicity and transparency, and its comparability aids in tracking global goals. However, it provides little insight into the economic, social or environmental characteristics of urban areas (Dorward *et al.,* 2023), nor does it address questions of administration and governance.

Similarly, "peri-urban" has no standard definition, with some referring to the peri-urban in terms of its territorial characteristics, while others focus on the functional characteristics, and still others on its spatiotemporal characteristics as a transitional space (Follman, 2022).

Given the variation in definitions from country to country, this report advocates for governments to use their national definitions and government structures in interpreting the report.

Globally, there is no consensus on the most appropriate way to define urban, and, thus, peri-urban (see BOX 1). While this report acknowledges the methodological complexity of defining U-PU from a technical perspective, these definitional issues are not central to the report's narrative. This report recognizes the diversity of definitional tools employed by individual countries, and presents data on U-PU food security and food systems drawing on a range of definitional approaches, as well as arranging the discussion on governance and policy in ways that acknowledge the diversity of administrative functions in urban areas in different parts of the world.

1.3.2 URBAN AND PERI-URBAN FOOD SECURITY AND NUTRITION ACROSS THE SIX DIMENSIONS

Food security and nutrition is 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 (FAO, 2001). This can only be achieved if the conditions of all six dimensions of food security (availability, accessibility, utilization, stability, agency and sustainability) (HLPE-FSN, 2020) are met. Each of these dimensions is shaped by the lived experience of U-PU dwellers.

Within the **availability** dimension, it is essential to consider what kinds of foods are being made available through U-PU food systems and, therefore, how demand and supply are shaping food systems. It is important to note that, outside of extreme events (such as conflict, pandemic disease and natural disasters), urban areas do not struggle to ensure availability. This is one of the great strengths of U-PU food systems. However, urban areas are often over supplied leading to waste and pollution (CHAPTER 3).

Accessibility has often been framed in terms of **economic accessibility** in U-PU areas. However, **physical and social accessibility** are also important determinants of FSN in U-PU areas, which are often characterized by spatial and socioeconomic inequalities, and spatially heterogenous food environments (CHAPTER 4).

Food safety is a critical urban challenge, which undermines FSN within the **utilization** dimension. Safe storage, preparation and consumption of food is compromised by unequal access to basic services (water, sanitation

and reliable and affordable energy) in U-PU areas. This impacts food choice and diet quality (Chapters 3 and 4). **Factors shaping food availability, accessibility and utilisation interact in urban space to shape FSN outcomes.** Unequal physical access to affordable, nutritious and safe foods is compounded by transportation inequalities, unequal access to basic services and adequate housing, unequal land access, and high intra-urban inequality. These issues are more keenly felt in urban slums and peripheral areas (CHAPTER 5).

The **stability** dimension in urban areas needs to extend beyond considering a stable supply of foods (availability) and stable food prices (accessibility), to consider the broader challenges of livelihood, employment and political instability that are often associated with U-PU areas (Chapters 2 and 3). Given their high dependence on market sources for food, price shocks are a particular challenge for urban residents.

Agency provides both challenges and opportunities in U-PU areas. While there are concerns that agency in urban areas may be limited by the dependence of residents on purchased food and by asymmetries of power in food systems, the proximity of U-PU residents to the local government provides opportunities to engage in food-system governance (CHAPTER 6). The inclusion of indigenous knowledge and food practices in U-PU food systems and diets is a critical exercise of agency.

Finally, in terms of the **sustainability** dimension, it is within U-PU areas that the food-water-energy nexus (normally framed at the ecosystem level) is localized, and these components impact the everyday lives and food strategies of residents (Living Off -Grid Food and Infrastructure Collaboration *et al.*, 2023). Within the U-PU FSN, it is essential to consider sustainability throughout the food system, from production to consumption (CHAPTER 3), and to examine how unsustainable practices across food systems, urban systems and related systems interact to shape FSN outcomes (CHAPTER 2).

Food insecurity in urban areas is inextricably linked to the spatial characteristics of urban areas, which shape mobilities, economic opportunity, access to basic infrastructural services, and exposure to environmental risks and hazards. The urban environment may also create high levels of spatial and social inequality, which impact political representation and voice (CHAPTER 2). The spatial, economic, environmental, social and political characteristics of urban areas affect all six dimensions of FSN. This leads to U-PU food insecurity being concentrated in low-income areas of cities, where environmental risks and infrastructural deficiencies are concentrated and which are increasingly characterized by multiple burdens of malnutrition. The current state of U-PU FSN is addressed in Chapter 5 of this report.

It is important to note that, while the report adopts the six dimensions as an analytical frame, most of the available research on U-PU FSN centres on the access dimension.

1.3.3 URBAN AND PERI-URBAN FOOD SYSTEMS

There is not yet a single, accepted definition of U-PU food systems. The firmest definition currently available is from Tefft *et al.,* building on the FAO Urban Food Systems Diagnostic and Metrics Framework (2017):

"Food systems include the range of activities in the production, processing, distribution, marketing, preparation, consumption and disposal of goods that originate from agriculture, forestry or fisheries, including the inputs needed and the outputs generated. Composed of traditional, modern and informal channels, food systems also involve the people and institutions that initiate or inhibit change in the systems as well as the sociopolitical, economic and technological environments in which these activities take place. This definition includes food security and the wider set of systems in which food operates. Urban food systems, specifically, hone in on activities that occur in and/or impact urban and peri-urban areas" (Tefft et al., 2021, p. 4).

This report considers **U-PU food systems as incorporating both 1) food-system activities that take place within a given urban or peri-urban area and their interaction with other systems, and 2) food-system activities that take place outside the urban or peri-urban context, but which flow into the given urban or peri-urban area, and their interaction with other systems**. The impact of U-PU food systems extends beyond the boundaries of the U-PU areas, with flows of, *inter alia*, food, resources, money, labour and waste into and out of the urban.

Aspects of food systems that commonly fall within U-PU areas include food environment, retail, wholesale, food-service activities, some processing and transformation, storage, distribution and some production. Many of these activities (particularly production, processing, storage and wholesale) occur mainly outside U-PU areas, but impact U-PU areas. Further, urban areas act as consumption, aggregation and disaggregation areas, where food flows in and out, with or without further processing (Karg *et al.,* 2023), and food that flows into given urban areas may be transported – again, with or without further processing – to neighbouring smaller urban settlements, or aggregated and exported to other countries. While some food-system activities taking place within U-PU areas do not contribute to that area's food consumption, these activities contribute to local economies and employment and therefore are indirect contributors to local food security.

Since the mid-1990s there has been considerable focus on developing and supporting local food systems in response to critiques of the increasingly globalized food economy (Kloppenburg, Hendrickson and Stevenson, 1996). Significant investment has focused on the City Region Food System (defined as "all the actors, processes and relationships that are involved in food production, processing, distribution and consumption in a given city region" (FAO, 2024)), territorial food systems, and urban–rural linkages. **While moving towards more territorial food systems may have many benefits for FSN, it is essential to acknowledge the existing geopolitical complexity of the systems currently feeding urban areas.** Policymakers must work with both idealized and actual foodsheds (the area that produces food for a particular area) when considering food-systems and food-security policy.

The food feeding the city is produced within U-PU areas, but also in other areas within and beyond the national borders. These flows of food are shaped – as first identified by Hedden over 100 years ago – by transport infrastructure, trade regulations and standards, which control the flow into the urban, and by demand from within the urban (Hedden, 1929). Different sectors of the urban population have varying degrees of dependency on local or distant sources of food, with poorer residents often dependent on more distant sources (Hemerijckx *et al.,* 2023). By way of example, in Cape Town, South Africa, wealthier residents consume fresh chicken from producers less than 150 km from the city, while poorer residents depend on much cheaper, imported ("dumped") frozen chicken pieces from Brazil, Denmark, Ireland, Poland, Spain and the United States of America (Joubert *et al.,* 2018).

In unpacking the question of the power of cities to shape food systems, it is essential to reflect on the differential power of cities to shape their foodsheds. Larger urban areas typically command a wider foodshed, but the foodshed also depends on the agricultural potential of surrounding areas, consumer wealth shaping demands for diversity, and national agricultural and trade policies.

As such, where urban areas get their food must be understood in the context of competing, overlapping urban food demands, taking into account the asymmetries of power across different states and urban areas around the world (Friedmann, 1986; Wallerstein, 2011). Relatedly, food systems in many LMICs have been shaped by policy prescriptions oriented towards production for export and reliance on imports, which undermines the potential of local production for local consumption. This raises important questions addressed in this report about the power of individual cities to shape their food systems in the context of global trade regimes.

An example of this is Kisumu, Kenya, a well-known source of Nile perch and a city where fish is an important part of the traditional diet. However, most of the perch caught in Kisumu is sold into the Nairobi foodshed or the foodsheds of foreign cities, which pay higher prices for the fish than local residents can afford, while Kisumu residents consume tilapia imported from China (Ogello, Outa and Ouma, 2021). Chapter 3 discusses key activities within U-PU food systems and what needs to be strengthened in the interest of food security. Chapter 4 discusses the nature of the relationship between supply and demand and how these are mediated through the urban, focusing on food environments and consumption in U-PU contexts.

1.3.4 RIGHT TO FOOD AND RIGHT TO THE CITY

Urban and peri-urban food insecurity is heavily influenced by formal and informal power structures and by policies and legislation, which result in urban residents having differential realisation of the rights to food and to access to city services and infrastructure. Consequently, reinforcing fundamental rights to food and to the city is essential in tackling U-PU FSN. This rights-based framework informs the governance approaches recommended in this report.

Right to food

The right to food is a fundamental human right recognized by international law, first affirmed in Universal Declaration of Human Rights (United Nations, 1948), and later made enforceable in the International Covenant on Economic, Social and Cultural Rights (United Nations, 1967).

The right to food has three main components: states have a duty to respect, protect and fulfil citizens' human rights. This means that government bodies must not interfere with a person's right to rely on their own efforts to find or create food for themselves and their communities (duty to respect). Secondly, states have an obligation to protect citizens against any interference from third parties with their right to food (duty to protect). Thirdly, the **obligation to fulfil** (facilitate and provide) entails that governments must pro-actively engage in activities intended to strengthen people's access to and utilization of resources so as to facilitate their ability to feed themselves. As a last resort, whenever an individual or group is unable to enjoy the right to adequate food for reasons beyond their control, states have the obligation to fulfil that right directly. Governments are obliged by law to fulfil such duties.

Implementing the right to food in cities, in the context of the challenges and opportunities brought on by rapid urbanization and changing lifestyles in U-PU areas, requires various strategies and initiatives to ensure that every individual has access to safe, nutritious and culturally appropriate food.

The three obligations of states with regard to the right to food can be transformed into concrete policies in urban settings, for instance, establishing zoning codes to formalize community gardens and other urban-agriculture activities; preventing third-party interference with access to land given to communities for urban farming; moderating the influence of corporate food actors in food-retail planning; controlling the marketing of foods high in sugar, salt and fat; or establishing direct food access for citizens in the aftermath of natural disasters such as earthquakes, wildfires, droughts or floods.

This report acknowledges the distinct nature of cities, the urgency of U-PU food-system change and the challenges and opportunities in relation to U-PU FSN. Implementing the right to food entails recognizing human rights principles as a whole, in a manner responsive to city-life requirements. Furthermore, the implementation of human rights depends on the availability of procedural tools, which facilitate participation in decision-making, ensure transparency and accountability, establish monitoring, and operationalize sensitivity to considerations of justice and non-discrimination. **Although most cities do not have autonomous power to implement the right to food independently from central governments, procedural tools of the human rights approach can be helpful**

to local authorities seeking to implement the right to food and other relevant rights to ensure that their policies are just, fair, democratic and measurable. Such tools empower local authorities to strengthen food policies and incentivize central governments to follow a similar path.

Right to the city

One of the principles of the human rights system is that human rights are indivisible and interconnected. The right to food is closely connected with many correlative rights, including the right to the city. The concept of "a right to the city" was presented and articulated by activists and scholars as a right that empowers city residents and protects them from neoliberal economic structures (Witt, 2016).

The right to the city includes several rights that city residents require in order to enjoy an adequate living standard, a foundational right enshrined in the Universal Declaration of Human Rights (United Nations, 1948), and repeated in International Covenant on Economic, Social and Cultural Rights, Article 11 (United Nations, 1967). A new generation of rights, including the right to the city, access to clean water, a clean and healthy environment, and .decent work and wages, were recently included in various legal instruments. As presented in chapters 4 and 5, these rights are essential to the realization of FSN. The right to the city, for instance, encompasses the right to employment and economic opportunity, recognizing the role of informal-sector food activities in urban livelihoods and food security (CHAPTER 3). While the right to the city is not technically part of human rights law, it brings together into a single set a group of rights that are necessary to fight against the influence and control of large corporations and powerful forces that are increasingly taking over U-PU food systems. The right to the city is a concept that makes use of human rights tools to encourage community involvement and of decision-making

The right to the city focuses on the idea that urban spaces should be inclusive, participatory and designed to meet the needs of all residents. It encompasses the right to have access to and shape urban resources, including housing, public spaces and services. The right to the city emphasizes the importance of citizen participation in decision-making processes related to urban development, including decisions about land use, infrastructure and public services.

In summary, the right to food and the right to the city involve recognizing the impact of urbanization on food security and encouraging advocacy in favour of inclusive urban development that prioritizes equitable access to nutritious food for all residents. These rights can be employed as a valuable tool by organized urban communities. Furthermore, integrating these rights into urban policies and practices can contribute to building sustainable and just urban environments, with transformational impacts on the realization of U-PU FSN goals.

1.3.5 URBAN AND PERI-URBAN FOOD-SYSTEM GOVERNANCE

It has been asserted in many global and national policy spaces that cities hold great power in shaping food systems (Haddad, 2023; Hawkes, 2023). In fact, historical evidence demonstrates that urban areas have an outsized impact in shaping food systems, and that, at times, this has been driven by national policy directives. Despite these assertions, paradoxically, in much of the world urban governments hold and assert very little direct power over their own food systems. As is evidenced in the discussion regarding foodsheds (SECTION 1.3.3), U-PU food systems are shaped by a combination of local, national and global policy and economic processes.

How, then, can urban food systems be transformed to improve both FSN and wider food-system benefits in the context of the limited power of urban governments? What is the "power of the city" and what form does this power take? In many parts of the world, local governments have very little power to shape local food systems and, often, the power of the local

government is not well understood. The nature of the power of cities is discussed in Chapter 6.

Given the conceptualization of U-PU FSN and food systems described herein, the report proposes three broad entry points to maximize the leveraging of power to strengthen U-PU food systems. **The first is to acknowledge the existing power of local governments (city or municipal) and encourage multilateral governance.** The power that does reside at the local-government level to shape food systems is often unacknowledged. Spatial planning, the provision of basic infrastructural services, environmental health policies and local economic development policy, all of which typically fall within the mandates of local governments, fundamentally shape food security and food systems, but are rarely acknowledged as food policy. Greater food-sensitivity within existing urban mandates can be leveraged to effect positive food-system transitions. This requires recognition of local-government power and political will, which may be possible if the co-benefits of food security and a more resilient, equitable food system for wider urban goals are presented. However, although there may be co-benefits, it is important to also acknowledge that embedding food security and food systems thinking into urban governance will also necessitate trade-offs, and that core FSN principles need to be established.

The second is multilevel governance. Some food-system activities that take place within urban boundaries fall under national jurisdictions. Additionally, U-PU food systems extend beyond urban borders to provincial, county, state or national government jurisdictions. Components of U-PU food systems beyond national borders are shaped by national, regional and global trade agreements, and social fiscal policies. As such, effective action to strengthen U-PU food systems requires commitment to policy development and actions across multiple levels.

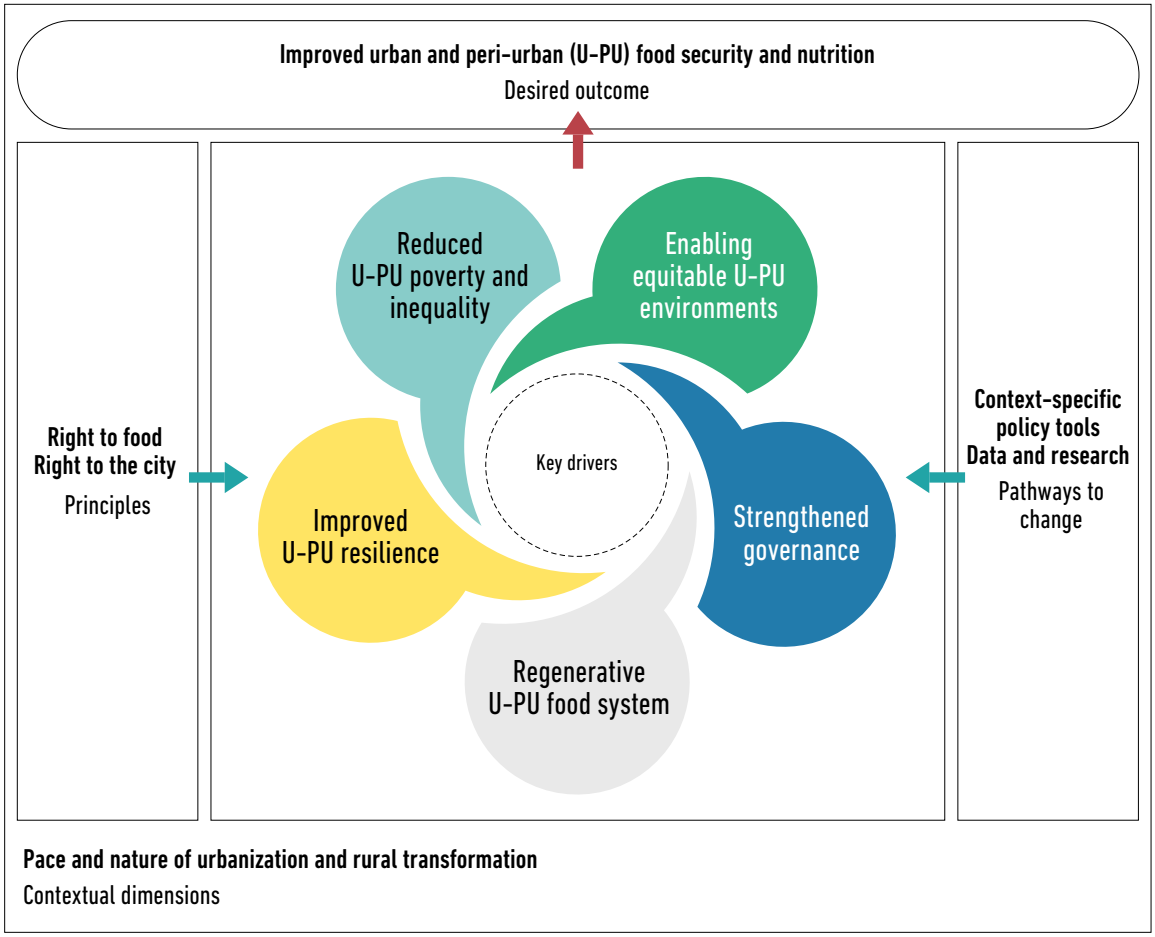
The final one is multi-actor governance, informed by a rights-based approach. Many shifts and transformations in food systems are led by private-sector actors and civil society. These actors should participate in decision-making regarding food–system governance. This report uses the term multi-actor rather than multistakeholder governance. This is a deliberate decision in light of concerns in global food-policy spaces regarding the imbalance of power and voice in multistakeholder platforms and the fact that such platforms should include participants beyond those generally considered to be the stakeholders in food-system processes, including informal sector actors and urban consumers. The power to shift food systems requires increasing the agency of urban consumers to shape urban demand. Additionally, and of particular importance, small-scale and informal-sector actors, often historically marginalized, must be included in governance processes as active agents in transforming food systems. It is essential that these multi-actor processes have principles of equitable inclusion embedded within them and that they be linked to enhancing the right to food and right to the city, building on the principles of increasing recognition, representation and fair distribution, as identified by the HLPE-FSN (2023).

1.4 THEORY OF CHANGE

The report's theory of change (FIGURE 2) argues that, in the context of urbanization and rural transformation, improving U-PU FSN across all six dimensions requires addressing food-system drivers as well as other interacting systems and drivers of FSN outcomes.

The direction of change across each of these drivers must be informed by the principles of the right to food and the right to the city. The theory of change identifies five interacting drivers of change within U-PU contexts that can be harnessed to shape FSN outcomes. The nature of these interactions and the relative importance of each driver is context specific, and pathways to change must be via integrated policy tools, informed by local context. This requires a commitment to improved data gathering, including disaggregation, and research for FSN, to better understand U-PU FSN drivers and outcomes. This will support evidence-based

FIGURE 2
THEORY OF CHANGE FOR IMPROVED URBAN AND PERI-URBAN FOOD SECURITY AND NUTRITION



Source: Authors' own elaboration.

decision-making and the monitoring and evaluation of policies and programmes.

The first driver of change is strengthened U-PU food systems. Informed by the underlying principles of the theory of change, actions to strengthen food systems should be based on building food systems that are equitable, just and inclusive; productive and prosperous; participatory and empowering; resilient; regenerative and respectful to the ecosystem; and healthy and nutritious.

The second driver of change is the development of more equitable U-PU environments. Actions should focus on redressing spatial, economic and infrastructural inequities in U-PU areas that undermine FSN.

The third driver of change is reducing poverty and inequality among residents within U-PU areas. Actions should focus, at the individual and household levels, on addressing multidimensional poverty, social protection and improved livelihoods.

The fourth driver of change is strengthened governance of food systems and other systems in U-PU areas. Actions should focus on national governments' acknowledgement of and respect for the mandates of local/city and subnational government in shaping food systems; providing support to local governments to enable them to

act on these mandates; providing investment to address the challenge of weak and fragmented local government; and investing in multilevel, multilateral and multi-actor governance processes.

The final driver of change is improved U-PU resilience, understood as the ability to resist, absorb, recover and reorganize in the context of shocks and crises. The impact of shocks and stresses is asymmetric across people and places. Actions to increase resilience in U-PU food systems and other systems should redress asymmetric vulnerabilities and impacts and work towards building system-wide resilience.

1.5 REPORT STRUCTURE

Chapter 1 establishes the rationale for the report, the underlying need for strengthened U-PU food systems for FSN and the principles upon which the report's narrative is based. It explains the core concepts engaged in the report and then describes the theory of change.

Chapter 2 demonstrates how **the process of urbanization shapes food security, nutrition and food systems governance in U-PU areas.** It highlights the importance of understanding the context of a given U-PU area, in terms of geographic location, settlement size and degree of informality, when developing policy and governance responses. The chapter draws particular attention to the ways in which U-PU areas concentrate vulnerabilities along several dimensions which impact food security, including climate-related challenges, conflict and inequality. It calls for improving **U-PU resilience** as a critical entry point for improving U-PU FSN.

Chapter 3 outlines the challenges and opportunities presented by key U-PU food-system activities for improving U-PU FSN. The activities addressed are food production and trade; midstream supply-chain activities, including transport, logistics, processing and wholesale; downstream activities, including retail and service (both market and non-market food sources); and loss and waste. Given that U-PU food systems include elements, activities and actors operating within and beyond U-PU areas (from rural hinterlands to distant countries), governing them is complex. This chapter highlights the importance of maintaining food system **diversity, including traditional and informal components,** in ensuring food system resilience and FSN. This requires the identification and management of both synergies and trade-offs across these diverse components.

Chapter 4 uses the entry point of the food environment to demonstrate how food -consumption patterns in U-PU areas are shaped by the interactions of the food system with other systems, including housing, water, energy, and by socioeconomic status. Urban and peri-urban diets and food -sourcing strategies vary significantly by income and other individual and household characteristics. This chapter demonstrates that the **factors shaping food choice within U-PU food environments extend beyond food-system issues and, therefore, require a broader suite of interventions.** These include addressing time poverty, energy poverty, infrastructure deficiencies, and employment and livelihood stability.

Chapter 5 provides data on the state of U-PU FSN. Food safety and nutrition outcomes are framed as the outcomes of the systemic issues addressed in chapters 1 through 4. The chapter highlights the high prevalence of food insecurity in U-PU areas. It further explains that **food insecurity and malnutrition are unevenly distributed within U-PU areas**, with slums and peri-urban areas having the highest incidence, and women, children, marginalized ethnic groups and migrants being disproportionately affected. Furthermore, food-safety challenges concentrate in poor U-PU areas. Although urban diets are typically more diverse than rural diets, they are typified by higher consumption of ultra-processed foods and food away from home.

Considering the findings presented in chapters 2 through 5, Chapter 6 provides an analysis of the governance challenges and opportunities associated with U-PU FSN. It finds that **the complex nature of U-PU food systems makes it essential to work through multilevel, multisectoral, multilateral and multi-actor**

governance processes within and beyond the state. This includes, for example, potential entry points such as multisectoral food strategies at the local government level and multi-actor platforms, such as food-policy councils. The chapter notes the need for contextual governance responses and the need to take particular care to avoid reinforcing power asymmetries common in multi-actor platforms.

Chapter 7 presents **six clusters of policy instruments, which, when combined, can form integrated strategies.** The clusters are: regulatory policy, fiscal tools, transfer instruments, market policies, investments and behaviour change. The chapter also provides examples of good practice in urban food governance. These policy instruments provide the governance entry points that frame the report's recommendations, set forth in Chapter 8.

TABLE 2
REPORT STRUCTURE

CHAPTER 1
Rationale for the report, the underlying need for strengthened U-PU food systems for FSN. Principles, core concepts and theory of change.

CHAPTER 2
How the process of urbanization shapes food security, nutrition and food systems governance in U-PU areas. Importance of the context. Call for improving resilience.

CHAPTER 3
Challenges and opportunities U-PU food systems. Importance of maintaining food system diversity to ensuring food system resilience and FSN.

CHAPTER 4
How food consumption patterns in U-PU areas are shaped by the interactions of the food system with other systems, including housing, water, energy, and socio-economic status.

CHAPTER 5
Most recent available data on U-PU FSN. High prevalence of food insecurity in U-PU areas; highest incidence and women, children, marginalised ethnic groups and migrants. Food safety challenges concentrate in poor U-PU areas. Ultra-processed foods.

CHAPTER 6
Analysis of the governance challenges and opportunities. Multilevel, multisectoral, multilateral and multi-actor governance processes within and beyond the state. Power asymmetries common in multi-actor platforms.

CHAPTER 7
Outline of six clusters of policy instruments (regulatory policy, fiscal tools, transfer instruments, market policies, investments, and behaviour change), which combined can form integrated strategies.

CHAPTER 8
Recommendations.

Source: Authors' own elaboration.

CHAPTER 2

DYNAMIC RELATIONSHIPS BETWEEN URBANIZATION, FOOD SYSTEMS AND FOOD SECURITY AND NUTRITION

Aerial view of Ehningen, Germany, 2016. Spatial planning, provision of basic infrastructural services, environmental health policies and local economic development policy fundamentally shape food security and food systems, but are rarely acknowledged as food policy. Food-sensitive planning and urban design have been offered as one approach to assist in responding to food-system challenges across urban scales.

KEY MESSAGES

- Cities are facing urgent, complex and interconnected challenges in an increasingly uncertain world. These challenges interact with U-PU food systems to generate conditions of vulnerability. Cities can concentrate vulnerabilities along multiple dimensions.
- Urbanization profoundly shapes food security, nutrition outcomes, food systems and their governance in urban, peri-urban and rural areas.
- Urbanization and peri-urbanization result from interconnected transformations in demography, economies, culture, social systems, land use and technology and innovation.
- The experience of urbanization and peri-urbanization and its outcomes on food systems and food security vary according to region; urban typologies; and underlying economic, social and governance conditions, especially between low-, middle- and high-income countries, with ongoing dynamics and evolution.

2.1 INTRODUCTION

In a rapidly urbanizing world, cities are facing increasing uncertainty across urban sectors such as housing, transportation, and emergency preparedness. Globally, urban priorities include the provision of adequate housing, addressing the key roles of cities in contributing to climate solutions, and localizing the Sustainable Development Goals (SDGs) (UN-Habitat, 2022a). Mobility and transportation are major challenges and opportunity areas for cities and are implicated in a number of outcomes, including equity, sustainability, safety, public health and economic productivity (UN-Habitat, 2017). The rapidly evolving "gig economy", which now accounts for over one-tenth of the global labour market, is disrupting the use of urban space (such as empty office buildings), concentrating inequity (including resulting in low levels of social protection for workers) and growing at a much faster rate in LMICs compared to HICs (World Bank, 2023). Despite the need for the intervention of urban planners to address these challenges, the Commonwealth Association of Planners found a critical lack of urban planning capacity in a number of Commonwealth countries, especially in LMICs (Commonwealth Association of Planners, 2018). Additional urban challenges include aging and unsustainable urban infrastructure, waste-management systems struggling to keep up with an increasing volume and complexity of waste, and the impacts of the interaction of these challenges on U-PU residents.

This chapter describes how urbanization and interconnected urban challenges shape FSN. Section 2.2 defines urbanization and peri-urbanization. Section 2.3 differentiates urbanization experiences in HICs and LMICs, with a focus on primate versus secondary cities and on informality. Section 2.4 outlines links between urbanization processes and food systems and explores how interventions or shocks to various urban systems can impact U-PU food systems and vice versa. The final section, Section 2.5, discusses the implications of urban fragility and shocks for FSN and how to build urban resilience.

2.2 URBANIZATION AND PERI-URBANIZATION

Urbanization is a critical driver of food insecurity and greatly impacts food systems and their governance in U-PU areas. Today, more than half the world's population lives in urban locations, and by mid-century, this will increase to more than two-thirds of the world's population. Some 90 percent of the growth in urban populations will take place in Africa and Asia (UN DESA,

2019). By 2050, less developed countries will be home to 83 percent of the world's urban population and to 87 percent of the world's total population. At present, approximately 50 percent of rural Africans now live within 14 km of a city (OECD/UN ECA/AfDB, 2022).

Urbanization happens because of interconnected transformations in demography, economies, culture, social systems, land use and technology and innovation. It is occurring faster than at any other time in history. Urbanization unfolds differently across time and space, with notable implications for FSN in different contexts and among different segments of urban populations.

Recent international reports suggest that rural–urban continuum or urban–rural linkages lenses may be more useful in understanding how urbanization and food systems are linked than the traditional lens of the rural–urban divide (UN-Habitat, 2019; FAO *et al.,* 2023a; WFP, 2023a). **It is especially important to understand peri-urbanization in the context of rapid urbanization and the rural-urban continuum, particularly because future global population growth will predominantly occur in peri-urban zones** (Follman, 2022; Sahana *et al.,* 2023). Definitions of peri-urban areas vary, but can be understood generally as areas within two dynamic boundaries, where the inner boundary is the edge of an urban area and the outer boundary exists somewhere within the rural landscape (Sahana *et al.,* 2023). Three important peri-urban definitional framings include: the *territorial* (that is, the space around a city, which is highly relevant for food production), the *functional* (that is, the city's "resources hinterland", which provides goods, services, labour, environmental resources and ecosystem services that are highly relevant for food production, processing and distribution), and the *transitional* (that is, how the resource hinterland changes over space and time, which is especially important for transformation across the entire food system) (Follman, 2022; Sahana *et al.,* 2023). In view of the complexity of interpreting and measuring peri-urbanization, the Degree of Urbanisation classification (DEGURBA) – a new international standard for comparing cities, towns and suburbs, and rural areas – was developed (Eurostat, n.d.). However, as will be demonstrated in the next section, relationships between urbanization and food-system processes and outcomes vary substantially by city context.

2.3 PERI-URBANIZATION AND URBANIZATION: DIFFERENTIATING THE EXPERIENCES OF HIGH-INCOME COUNTRIES AND LOW- AND MIDDLE-INCOME COUNTRIES

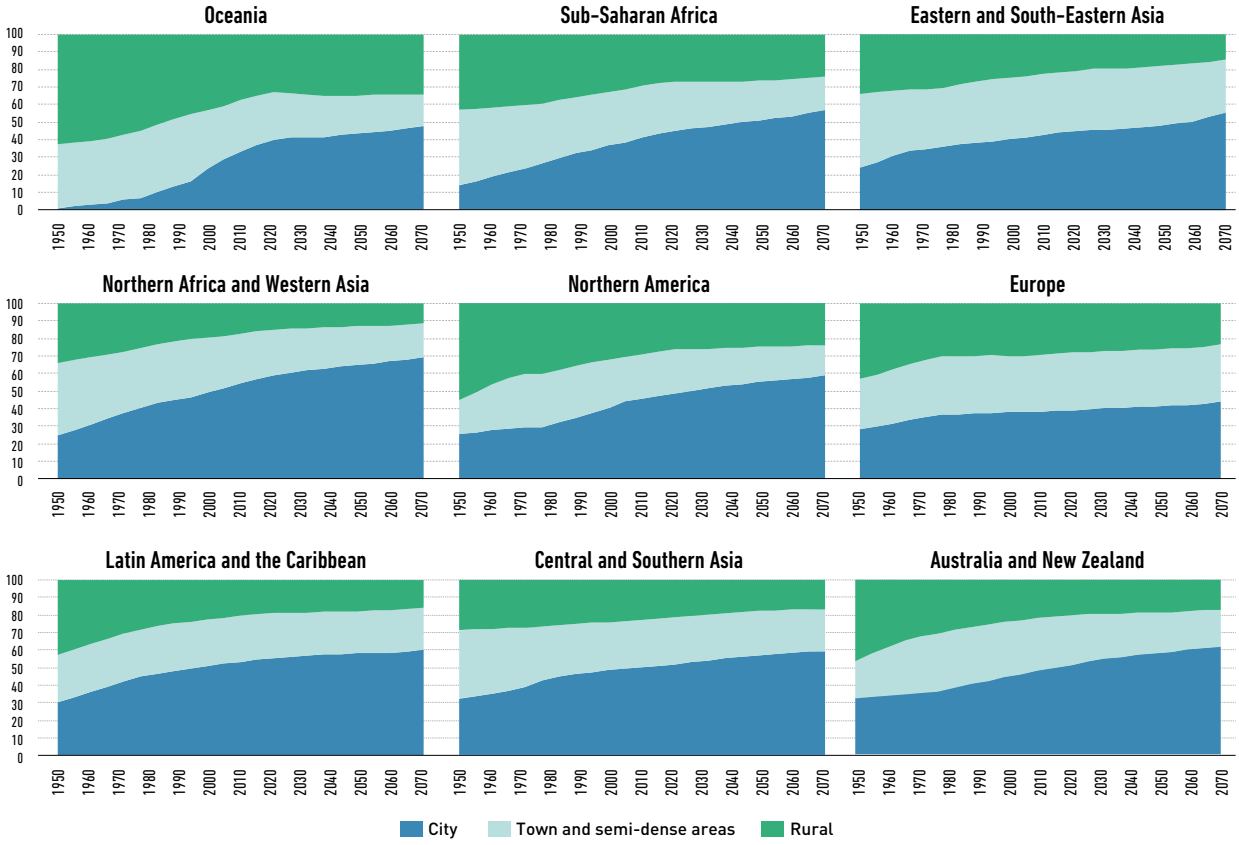
Urbanization is transforming rural livelihoods via multiple pathways and is occurring especially rapidly in sub-Saharan Africa and South Asia (Palanivel, 2017; de Bruin, Dengerink and Van Vilet, 2021; FAO *et al.,* 2023a). Urbanization can enhance proximity to economic opportunities and ideas, which can bolster innovation, and higher concentrations of people can improve access to job opportunities, encourage infrastructure investment, and facilitate the distribution of services that sustain growth (Glaeser, 2011). Early studies observed positive impacts of urbanization on economic growth, municipal infrastructure and rural-to-urban migration, which fuelled growth in urbanization policies in the developing world (Chenery and Taylor, 1968; Pugh, 1995; Hope, 1998; Henderson, 2003; Njoh, 2003). However, more recent research acknowledges the complex relationships between urbanization and economic growth, noting that urbanization does not confer equal benefits across regions (Turok and McGranahan, 2013; Chen *et al.,* 2014; Wang, Li and Fang, 2018; Goldstone, 2020; Armeanu *et al.,* 2021). This is especially true in some low-income countries, where economic growth and urban infrastructure investments have not kept pace with the rate of urbanization and overall

population growth (Turok and McGranahan, 2013; de Bruin, Dengerink and Van Vilet, 2021).

Peri-urbanization and urbanization futures depend on local context: demographic characteristics, settlement configuration, local political and institutional systems, informality, local challenges and links to wider national and global economies (UN-Habitat, 2022b). Rates of peri-urbanization and urbanization also differ drastically across global regions. Figure 3 shows projections of population share by degree of urbanization, for different world regions, and demonstrates that the fastest projected increases in city population share will be experienced in sub-Saharan Africa, Oceania, Northern Africa and Western Asia, while Europe will experience the smallest increase in its city-population share. Clearly, rates of urbanization differ by region.

FIGURE 3

POPULATION SHARE BY DEGREE OF URBANISATION AND SDG REGION (1950-2070), ORDERED BY CITY POPULATION SHARE IN 1950



Source: UN-Habitat (United Nations Human Settlements Programme). 2022b. *Envisaging the Future of Cities. World Cities Report 2022.* Nairobi.

In addition, **peri-urbanization has different manifestations in different contexts.** In HICs, peri-urbanization is typically considered an indicator of urban welfare and well-being, with built environments featuring suburban, low-density development – places that are never expected to become urban. On the other hand, in LMICs, peri-urban growth is frequently considered a negative planning challenge because of informal and/or illegal, unplanned urban expansion and haphazard development (as in the case of the favelas in Brazil, shanty towns

in Africa and slums in South Asia) (Follman, 2022; Sahana *et al.,* 2023).

Urbanization patterns vary between regions. South Asia and sub-Saharan Africa will experience the fastest urban growth rates in the coming decades, placing distinct pressure on housing, infrastructure and services in countries that lack sufficient institutional and fiscal capacities (Lall *et al.,* 2021). Notably, most urban population growth in LMIC contexts is now driven by natural growth, rather than migration (Menashe-Oren and Bocquier, 2021). Latin America has much lower urban growth rates since half its population was already living in urban areas by 1960, and more than 80 percent of the population lives in urban areas today. Latin American cities have among the highest levels of economic inequality, which increases with city size (Ferreyra and Roberts, 2018).

2.3.1 DIFFERENCES BETWEEN PRIMATE AND SECONDARY CITIES

Many primate cities (the largest city in a region) in both high-income countries (HICs) and LMICs have faced multiple waves of spatial change due to forces of globalization, market reforms, investment trends, economic expansion and decline, and demographic shifts. In the 1970s and 1980s, many HIC economies restructured from primarily manufacturing to service-based economies. This resulted in deindustrialization and a flight to the suburbs in some places (such as Chicago and Detroit), while in others (such as Paris), it attracted more power and wealth within city centres, widening the economic gulf between urban cores and suburbs (Marcuse and van Kempen, 2000; Wacquant, 2008). More recently, aging populations, declining fertility and rising costs of living have led to shrinking cities in parts of Europe, Central Asia, the American "rust belt" and parts of East Asia (Cadavid *et al.,* 2017; Wolff and Wiechmann, 2018).

In some LMIC regions, economic restructuring is layered over colonial legacies of racially-, ethnically-, or religiously -segregated urban planning, weak property rights, and land-use and zoning laws that discourage investment in infrastructure. These dynamics discourage agglomeration of economies and productivity as it is difficult for consumers and workers to connect with firms that employ and serve them (Lall *et al.,* 2021). Consequently, workers prefer to live close to employment opportunities in dense, often informal settlements. This has resulted in "patchwork cities" (Garrido, 2019) – affluent enclaves in close proximity to slum housing, found in cities like Cape Town, Istanbul, Jakarta, Mumbai and Rio de Janeiro. These factors are most pronounced in Africa where cities are congested and disconnected, as well as having high costs of living. In fact, the price level of household consumption in sub-Saharan African cities is as much as 31 percent higher than that of cities in other continents with equivalent income levels, with distinct implications for the affordability of food (Lall, Henderson and Venables, 2017; OECD/UN ECA/AfDB, 2022).

Secondary cities, which typically have populations ranging from a few hundred thousand to a few million, are a critical part of the world's urbanization trajectory. About 60 percent of the world's urban population resides in such cities (Roberts, 2014), and 64 percent of the population in low-income countries resides in small cities and towns or within their catchment areas (Cattaneo, Nelson and McMenomy, 2021). In Africa, most urban growth is occurring in such secondary cities. Almost 4 500 such agglomerations emerged in the region between 1990 and 2015. There are many types of secondary cities, each with different food-system characteristics (Haysom and Battersby, 2022).

Secondary cities face unique challenges. First, globally, **the majority of the poorest urban residents reside in secondary cities and towns, rather than in large cities** (Ferré, Ferreira and Lanjouw, 2012; UN-DESA, 2020). Secondary cities typically receive a smaller share of public investment from central governments (Henderson, 2002). Access to services such as health and education may or may not be better in secondary cities than in larger cities. In slums in India, for example, access to these services is worse in smaller cities compared to larger cities (Sahasranaman and Bettencourt, 2021), while

smaller cities in Brazil and Indonesia provide better access to these services relative to larger cities (Post and Kuipers, 2023).

Next, secondary cities exist and grow for different reasons than primate cities. Secondary cities typically emerge because of extractive industries or administrative activities, because they serve as cross-border trading posts or urban development corridors, or because they are on the periphery of a major metropolitan area (Roberts, 2016; Haysom, 2023). In countries with more controlled urban management, such as China, secondary cities in rural areas arose as a result of attempted rural industrialization strategies to stall rural-to-urban migration (Long, Zou and Liu, 2009). "Rurbanization" – the process of urban-to-rural migration – is another driver of the creation and growth of secondary cities and towns, sometimes led by affluent urban dwellers investing in property and land in rural areas, often for recreational or retirement purposes (Roberts, 2016). This trend can result in secondary cities and towns having more non-rural employment, improved access to services, and more home-based enterprises. To summarize, secondary cities are rapidly expanding, face unique urban challenges, and have their own distinctive historical and current contexts. Additionally, while they are large enough for agglomeration economies, they are still small enough to be less burdened by inefficient infrastructure and have stronger linkages to their hinterlands compared to larger cities (Bloem and de Pee, 2017). For these reasons, **secondary cities have been increasingly identified as promising sites for strategic investment in urban interventions to improve FSN** (Bloem and de Pee, 2017; Monroy-Gomez *et al.,* 2022; Speich *et al.,* 2023).

2.3.2 INFORMALITY

Informality is a defining characteristic of most UP-U areas of LMICs. Informality has traditionally been conceived as unregulated housing settlements, unrecorded transactions and unprotected workers (Fawaz, 2023). Informality exists across urban sectors, including transportation (Cervero and Golub, 2007), housing (World Economic Forum, 2023), water systems (Choueiri *et al.,* 2022), waste management (Kala, Bolia and Sushil, 2022), and food systems, among many others. In all cases, informal and formal systems engage one another in complex ways, and multiple trade-offs exist. For example, while the informal transportation sector is criticized for contributing to traffic congestion, air and noise pollution, and traffic accidents, it brings important benefits to areas without formal public transit, such as on-demand access to jobs, healthcare, and service coverage – aspects which are often neglected in poor urban areas (Cervero and Golub, 2007).

In terms of FSN, informal U-PU food systems also present opportunities and challenges. For example, informal components of U-PU food systems are pathways for the supply of foods produced, processed, transported and sold by small and medium-sized enterprises (Moustier *et al.,* 2023). At the same time, their contribution to FSN is undermined by concerns about food safety and traceability, and states have typically been unable or unwilling to provide an enabling environment to support the informal U-PU food sector (Henson *et al.,* 2023). The informal sector will remain a component of U-PU food systems in most LMICs and its contribution to food systems and food security should be acknowledged within policy and governance spaces. To optimize the benefits derived from informal food systems and minimize the risks associated with them, governments must acknowledge the role of the informal food sector, as well as its challenges, in their efforts to strengthen U-PU food systems (Rousham *et al.,* 2023).

2.4 LINKS BETWEEN URBANIZATION, URBAN SYSTEMS AND FOOD SYSTEMS

As described in Chapter 1, urban systems interact with food systems and FSN in complex ways. This section describes the linkages between urbanization and food-system outcomes.

2.4.1 HOW URBANIZATION CAN IMPACT FOOD SYSTEMS

The 2023 State of Food Security and Nutrition in the World (SOFI) report (FAO *et al.,* 2023a) focuses on "urbanization, agrifood systems transformations, and healthy diets across the rural–urban continuum". The report explains the mechanisms whereby urbanization drives agrifood-system changes across the rural–urban continuum, from changes in food production (both positive and negative) to changes in consumer behaviour, ultimately affecting access to healthy diets (FAO *et al.,* 2023a).

To avoid duplication of the SOFI report, this section focuses primarily on the impacts of urbanization on U-PU food systems, food security and nutrition, where there has been less in-depth analysis[1].

Relationships between urban transformations across domains and food-system processes and outcomes are multifactorial, complex and rooted in the historical, political and economic contexts of the places in which they exist (de Bruin, Dengerink and Van Vilet, 2021). Many urbanization/food systems linkages have been assumed for decades, and some have been empirically demonstrated. Figure 4 shows a simplified version of urbanization/food-system linkages. Notably, many theoretical and empirical conceptual arrows are missing from this diagram in order to preserve legibility. For example, the many links between diverse elements of food systems (such as the links between international and domestic production within food systems, and between processing and packaging) are not represented. Figure 4 uses the example of how multiple aspects of urbanization relate to the consumption of food prepared away from home, which is widely accepted to negatively impact diet quality and associated health outcomes (Godbharle *et al.,* 2022; Wellard-Cole, Davies and Allman-Farinelli, 2022; Landais *et al.,* 2023).

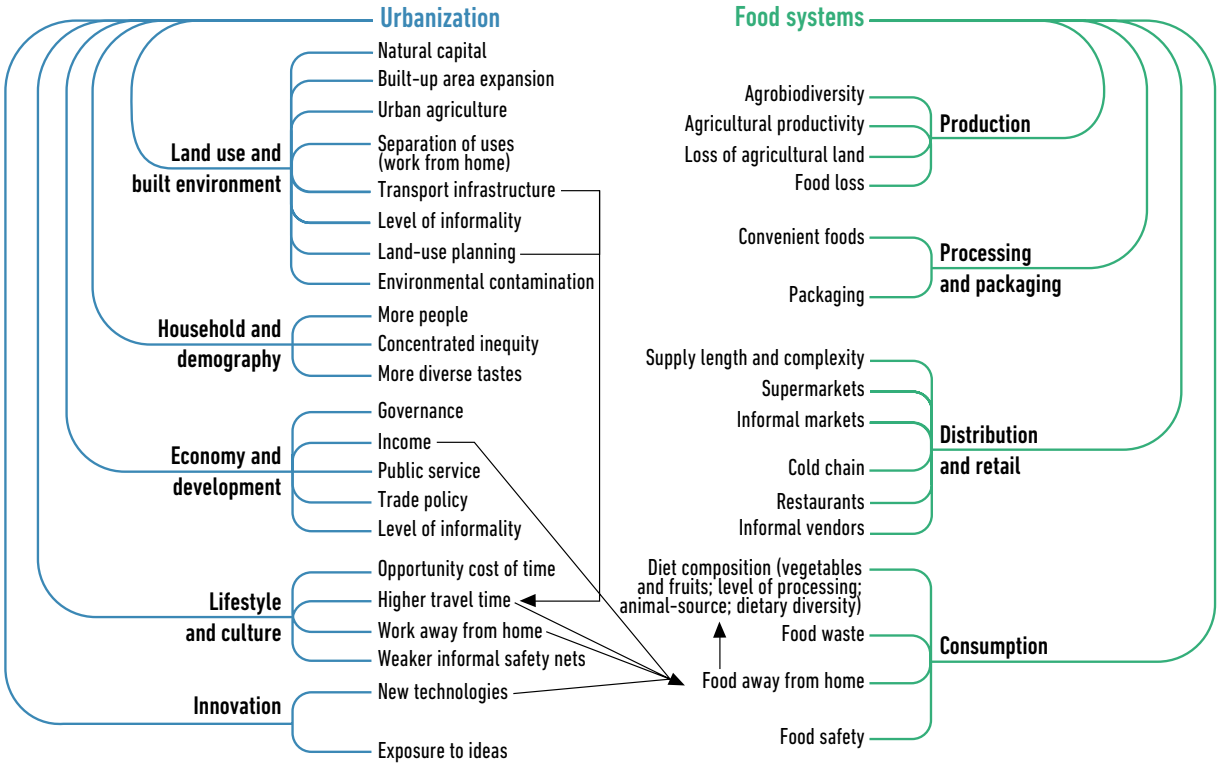
As Figure 4 illustrates, many factors across urbanization domains increase the consumption of foods prepared away from home. For example, higher household income, especially from women working away from home, means not only higher purchasing power for these foods, but also lower capacity for traditional household labour, including cooking (Ruel, Haddad and Garrett, 1999; Shapouri and Rosen, 2008). Transportation infrastructure and land-use planning impacts travel times, which itself is a predictor of consuming foods away from home (Guimarães *et al.,* 2022). As cities become more diverse with increasing global migration, diverse tastes are likely to result in higher purchasing of diverse cuisines prepared away from home. Finally, technological advancements in online food delivery systems have significantly impacted the availability and accessibility of foods away from home in both LMICs and HICs (Ali *et al.,* 2021; Brar and Minaker, 2021; Jia *et al.,* 2022; Shroff, Shah and Gajjar, 2022). Indeed, links between food-value-chain transformations and dietary outcomes are moderated by income, such that lower-income households suffer from poorer dietary outcomes across the rural–urban continuum relative to wealthier households (Gómez and Ricketts, 2013). These findings underscore the importance of both individual and community contexts in understanding the relationship between urbanization and food systems.

Urbanization is also linked to multiple forms of malnutrition in LMICs, through several mechanisms. Commonly, factors associated with child undernutrition are maternal characteristics, income/wealth, and household characteristics (such as access to improved sanitation and health care services). For instance, urban residence is associated with lower prevalence of child stunting and undernutrition, but with higher likelihood of child overweight and obesity (Ruel *et al.,* 2017; Khaliq *et al.,* 2022). However, disaggregation of poverty within urban residences illustrates that child undernutrition rates in poor urban areas are as high as those of rural residences, especially in peri-urban areas, which have poor housing conditions and less access to health care and improved sanitation. Maternal characteristics

[1] For more information on the pathways by which urbanization affects agrifood systems and access to affordable, healthy diets, see the 2023 SOFI report.

FIGURE 4

SIMPLIFIED VISUALIZATION OF LINKS BETWEEN URBANIZATION AND FOOD SYSTEMS, WITH A FOCUS ON URBANIZATION PROCESSES IMPACTING CONSUMPTION OF FOOD AWAY FROM HOME



Source: Adapted from: Seto, K.C. & Ramankutty, N. 2016. Hidden linkages between urbanization and food systems. *Science*, 352(6288): 943–945. https://doi.org/10.1126/science.aaf7439

associated with urban child undernutrition also appear to be uniquely different from those rural areas. For example, urban women with higher parity are more likely to have a child who has wasting (short for height) in Afghanistan and Nepal compared to rural women but this effect was not found in urban India (Harding, Aguayo and Webb, 2018; Guevara-Romero *et al.*, 2022). Further, in these same urban poor areas, women and mothers are also equally impacted by overweight and obesity, especially in contexts of rapid urbanization. This is primarily driven by reliance on cheaper but more energy-dense foods, and by limited income (Gao *et al.*, 2020). To accurately examine the burden of malnutrition (numerically and proportionally), public health programs and surveillance must disaggregate by residence areas (informal settlements) and by poverty in U-PU areas, which together attenuate the notion of an urban advantage in nutrition.

Another aspect of urban systems impacting food systems is technological, economic, social and political innovation, which most often is generated in urban areas. Box 2 provides an example of how generative artificial intelligence (an urban innovation) may disrupt urban food systems.

A final example of how urban systems interact with food systems is the association of urbanization with food safety through diverse pathways. Similar to the linkages described above, links between urbanization and food safety depend on city- and country-level context, such

BOX 2

IMPACT OF CHATGPT ON URBAN AND PERI-URBAN FOOD SECURITY AND NUTRITION

In November 2022, ChatGPT, a generative artificial intelligence (AI)-powered natural language processing chatbot was launched by a San Francisco-based tech company. It has been disrupting multiple industries ever since (Agrawal, Gans and Goldfarb, 2022). ChatGPT is one of a number of generative AI platforms that have evolved over the past few years. Generative AI has far-reaching implications for urban and peri-urban food security and nutrition. For example, generative AI may drastically and permanently alter food-supply management. Generative AI can improve food-demand forecasting by analysing historical demand variability, current inventory complexities and supply-chain disruptions. It can be woven in to supply-chain processes to ensure compliance with food-industry regulations. "Smart" products like cameras and sensors can be integrated with generative AI platforms to monitor real-time production, processing and distribution (Singh, 2023). On the retail end, 40 percent of top-level, retail executives of US grocery stores surveyed in 2023 expect to use generative AI for business application in the next year, predominantly for customer service, managing supply-chain logistics, inventory management and creating new private-label offerings (Silverstein, 2023). Online food-delivery services are rapidly expanding globally, with China expected to generate the highest revenue from online food delivery in 2024. Worldwide, user penetration in the meal-delivery market will be 28 percent in 2024 (Statista, 2023), and many of the largest delivery services are expanding their use of generative AI to innovate in customer service, marketing and employee productivity (Gupta, 2023; Malik, 2023). Many of these services are more widely available in urban than in rural areas, meaning that in urban areas, digital food environments have more significant potential implications for dietary intake and nutrition (Brar and Minaker, 2021).

that the burden of foodborne disease varies both with the level of economic development of a country and the stage of urbanization within a country (Jaffee *et al.,* 2019). In LMICs, for example, food safety concerns may actually reduce the consumption of fresh vegetables, fruits and animal-source foods, and increase the consumption of processed and packaged foods for consumers who can afford them (Liguori *et al.,* 2022).

As countries transition from predominately rural to increasingly urban, food-safety problems typically increase as larger amounts of risky foods are consumed, due to the deterioration of food selling, processing and consumption environments and the lengthening and increasing complexity of supply chains (increasing the opportunities for microbial spoilage and cross-contamination) (Grace, 2015a). Moreover, with increasing urbanization and incomes, the consumption of fresh produce and animal products (foods associated with the highest risk of foodborne disease) also increases. In addition, production begins to intensify, which can lead to: increased use of chemicals, production in polluted areas and, in the case of livestock, more crowding and disease (Grace, 2023). Both theoretical and empirical evidence shows that, with urbanization, food becomes riskier before it becomes safer (Jaffee *et al.,* 2019).

However, viewed from the economic perspective, as countries reach middle-income status, demand for food safety increases, accompanied by greater public and private food-safety control. As such, food safety improves. (The same process can take place within value chains serving the urban rich in poor countries.) By the time countries reach high-income status, food safety is generally high. This pathway, or food-safety-risk cycle, has the important implication that **many LMIC food systems are in the critical transition zone, where food safety is likely to deteriorate before it gets better, especially in urban areas. On the other hand, this also suggests a current moment of opportunity where appropriate actions can prevent health impacts and financial loss** (Jaffee *et al.,* 2019).

2.4.2 LINKING URBAN SYSTEMS AND MULTIPLE OUTCOMES

This section explores impacts beyond a strict focus on FSN to explain why cross-sector coalitions should work together to: a) prioritize urban interventions based on anticipated and unanticipated impacts, and b) consider how diverse urban interventions may impact FSN. The section first describes the complex links between diverse urban systems. Second, it addresses both intended and unintended consequences of urban interventions. Third, it discusses how such interventions can impact U-PU outcomes well beyond the intended outcomes. These discussions illustrate that cities are complex microcosms of regional, national and global forces, and that knowledge of the local context and multisector partnerships are critical to the success of any urban intervention designed to improve FSN.

Cities have been called "the nucleus from which humanities impact on all Earth systems can be observed" (Espey *et al.,* 2024, p. 364). Cities are adaptive and open complex systems – systems of systems (Bettencourt, 2021; Espey *et al.,* 2024). As such, it is crucial to remember that **urban systems are linked to each other in complex ways, and that changes in one system can effect changes in other systems.** For example, transportation systems impact public health and equity through many pathways (Giles-Corti *et al.,* 2016). Food systems in U-PU areas are closely linked to land-use and housing patterns. Other urban systems, such as water, energy, transport and waste management, impact food systems on a daily basis. Urban residents' food choices are shaped by their individual capabilities and by their food environments, both of which are embodied within urban systems shaped by material, social and natural infrastructures (LOGIC, 2023).

Urban interventions can be either deliberate policy interventions (such as public policy, programmes, information or private-sector or civil-society actions) or unanticipated spillover effects or emergencies that nevertheless substantially impact at least one urban system. **The relationship between an intervention in a particular urban system and the outcomes is complex and sometimes unexpected.** For example, deliberate policy interventions in one urban system do not necessarily lead to the biggest impacts in outcomes assumed to be most related to that system. One example of this is that affordable housing policies or housing assistance contribute to reducing food insecurity (Seo and Park, 2021) in ways that community gardens may not (Hume *et al.,* 2022). External challenges, such as conflict or war, climate shocks, or pandemics, also disrupt urban systems and can impact FSN, as described in Section 2.5.

Interventions in all urban systems have the potential to impact multiple outcomes and public goods. This report is mainly concerned with U-PU food systems and with FSN outcomes. However, as noted above, **interventions in multiple urban systems can sometimes impact FSN** even more than urban interventions designed specifically to address FSN. By the same token, interventions in food systems can have impacts far beyond FSN, in aspects such as safety, health and resilience. For example, community gardens have been found to support multiple social, economic and environmental benefits (Delshad, 2022). **These types of outcomes that go beyond FSN are relevant for leveraging support for food-related programming within local governments.**

Actors across all urban systems should consider multiple possible outcomes of the interventions which they are planning or advocating for. To increase buy-in for urban interventions that support FSN, and to maximize desirable outcomes beyond FSN, it is important for cross-sector coalitions to work together to prioritize urban interventions, and to consider how diverse interventions might impact FSN. Food-sensitive planning and urban design has been offered as one approach to address food-system challenges across urban scales (Haysom, 2021).

As evidenced throughout this report, local context is key to the success of any urban intervention designed to improve FSN. Therefore, local partners and multisector actors should be included in the design and implementation of such interventions.

2.5 FRAGILITY, FOOD SECURITY AND NUTRITION, AND URBAN FOOD-SYSTEM RESILIENCE

2.5.1 FRAGILITY AND FOOD SECURITY AND NUTRITION

Fragility has been defined as "the combination of exposure to risk and insufficient coping capacities of the state, system and/or communities to manage, absorb or mitigate those risks" (OECD, 2022, p. 11). The six dimensions of fragility are the economic, environmental, political, security, societal and human dimensions (OECD, 2022). In 2022, 60 countries were considered "fragile" by the OECD, representing a quarter of the world's population (1.9 billion people). Both the frequency and severity of fragility is expected to increase in the coming decades. Notably, fragility does not affect only low-income countries: 33 of the 60 fragile countries in 2022 were middle-income economies and five were upper-middle income economies. Fragile contexts are at the centre of the current global food-insecurity crisis: globally, of the 53 contexts with acutely food-insecure people in 2021, 48 were in fragile contexts. Moreover, of the 26 "hunger hotspots" identified in 2022, 22 were in fragile contexts (OECD, 2022).

While fragile contexts do not always experience violent conflicts, 80 percent of deaths from conflict were concentrated in fragile contexts in 2021 (OECD, 2022). Therefore, the World Bank Group considered fragility, conflict and violence (FCV) simultaneously, and outlined a strategy for addressing FCV in 2020 (World Bank Group, 2020). Given the mutually reinforcing relationships between food shortages and violence, in 2021, the World Bank Group followed-up with the publication of a strategy for building stronger food systems in FCV settings (World Bank, 2021). Increased recognition of the links between FCV and food systems has recently been formalized in a U.S. Agency for International Development report that explicitly addresses the bidirectional relationships between food-system drivers of FCV, and FCV drivers of food-system outcomes (USAID, 2023). Importantly, none of these reports that describe global links between fragility and food insecurity use a rural–urban continuum lens. The following section explores more deeply urban fragility and FSN.

The impacts of FCV described above are not experienced uniformly across countries, and even countries not considered fragile can have fragile subregions. **Fragile cities can be either primate or secondary cities that lack functional authority to provide basic security and respond to social needs, and/or lack of political legitimacy.** Cities may be located in fragile countries, where the outbreak of conflict, large-scale influx of **displaced persons,** or chronic rampant inflation cause food systems to be extremely stressed.

A major impact of FCV specific to urban areas is forcible displacement, which is inextricably linked to FSN. In 2022, a record 103 million people were forcibly displaced, including 62 million internally displaced people (UNHCR, 2023). Globally, forcible displacement is increasingly common, and is closely related to food insecurity. For example, in 2023, 90 million people were forcibly displaced in the 59 food-crisis countries or territories identified in the 2024 Global Report on Food Crises (FSIN and Global Network Against Food Crises, 2024). The most recent Global Report on Internal Displacement focused on food security (IDMC, 2023), emphasizing the strong connections between displacement and poor FSN outcomes. **Most displaced persons relocate to and are thus concentrated in urban areas. This concentration accelerates food insecurity in urban centres and aggravates disease outbreaks, thus increasing humanitarian needs, to say nothing of the impacts of forced eviction and secondary urban displacement** (IDMC, 2023; UNHCR, 2023). For example, in 2022, Somalia's most severe drought in 40 years resulted in a record 1.1 million internally displaced people, most of whom moved to the country's capital, Mogadishu, or the city of Baidoa, adding to the fragility of these cities (IDMC, 2023). **Forcible displacement can also significantly reduce agricultural activities,**

which further exacerbates food insecurity. This was the case in Burkina Faso, where population displacement due to violent conflict resulted in significant decreases in cropland in some areas (WFP, 2023b).

Within fragile and conflict-affected contexts there are clear violations of the right to food and the right to the city. As humanitarian agencies and governments work to support affected individuals and communities, it is imperative that this work be informed by the principles of respecting, protecting and fulfilling these rights.

2.5.2 URBAN SHOCKS AND FSN

Cities concentrate vulnerabilities along several dimensions, including climate-related challenges, conflict and inequity. Urban areas are particularly vulnerable to natural disasters (Gu, 2019), environmental risk and hazard (UNEP, 2007), and political instability (Hendrix and Haggard, 2015). Poor U-PU areas tend to be more vulnerable to shocks that affect food security, due to their geographic location in higher-risk areas (Gu, 2019) and to their limited capacity to buffer against shocks. Cities produce 70 percent of greenhouse gas emissions globally and are increasingly hard hit by climate shocks (Mukim and Roberts, 2023). Meanwhile, urban inequalities are deepening across the globe, and inequitable access to food, environmental amenities, education and transportation are intertwined (Nijman and Wei, 2020). Add to this the aging or absent infrastructure in many cities, particularly in LMICs (Koop *et al.,* 2022; OECD, 2023), and the ability of many cities to respond to population vulnerabilities is severely compromised.

Urban areas and their food systems are vulnerable to global and local shocks, the impacts of which demonstrate the fragility of urban food systems. This is true even in regions that are not considered fragile. Extreme weather events (Rosenzweig and Solecki, 2014), the COVID-19 pandemic (FAO, 2020a; Clark, Conley and Raja, 2021), and local political unrest are disrupting the functioning of urban food systems across the globe with increasing frequency. Shocks to urban food systems are linked to the interaction of increasingly consolidated and concentrated food systems (Hendrickson, 2020) and can be ongoing over a long period (Beall, Goodfellow and Rodgers, 2013; Alam *et al.,* 2022) or episodic (Selby and Desouza, 2019). For example, perennial flooding and economic or political riots that destroy transport routes, marketplaces and critical water and electricity infrastructure for food processing may all result in episodic food insecurity.

Unsurprisingly, fragile cities have limited capacity to buffer against shocks that affect food security. The ability to cope with shocks also depends on whether a shock is idiosyncratic (such as job loss, morbidity or mortality) or covariate (as in an epidemic or a natural disaster) (Zafar and Zehra, 2022). In urban areas, idiosyncratic shocks, such as the loss of assets due to fire or the loss of employment, may be experienced as a covariate shock. For example, in Chingola, Zambia, the closure of the town's mines created widespread and sudden unemployment, pushing many households into food insecurity, and the kinds of coping strategies typically used to recover from shocks were unable to be used due to the covariate nature of the shock (Chileshe, 2014).

Exogenous shocks impact U-PU food security in various ways. **Shocks can affect food availability through impacts of shocks on food systems, but more typically affect economic, physical and social access to food via loss of income, assets and networks.** This is particularly important in urban contexts where households are most dependent on market sources of food and have no alternative sources of food. Additionally, households may use short-term food insecurity as a strategy to meet other necessary expenditures and investment in recovery (de Waal, 1990; Duncan, 2013). Further shocks may impact the utilization dimension of food security as loss of assets and damage to infrastructure shape household food storage and preparation capacity, thereby impacting diet quality.

2.5.3 BIDIRECTIONAL RELATIONSHIPS BETWEEN URBAN CHALLENGES AND FSN

Urban challenges impact and are impacted by U-PU FSN. The same is true for urban challenges related to climate, conflict and concentrated inequity. The relationships between these urban challenges and FSN are complex. This section provides a few examples of how these urban challenges bidirectionally impact FSN outcomes.

First, **urban climate challenges impact food loss and food waste and vice versa.** Urban populations are predicted to consume 80 percent of global food in 2050, and cities are at the epicentre of food-waste generation and management (Parsa *et al.,* 2023). For example, extreme heat can negatively impact food storage and safety, with higher temperatures associated with shorter shelf life of perishable products and increased spoilage (Milliken, 2023), leading to the loss of important nutrients and micronutrients (Garcia-Herrero *et al.,* 2019). As another example, extreme weather events can damage critical infrastructure, which impacts food flows and storage. At the same time, food waste compounds environmental sustainability challenges, posed by natural resource degradation, climatic and environmental changes, and population growth and other associated demographic changes currently faced by U-PU food systems (Lemaire and Limbourg, 2019). Better management of food waste has the potential to substantially lower greenhouse gas emissions and reduce the environmental footprint of food systems (IPCC, 2023). Therefore, better food-waste management in urban areas represents an opportunity to reduce emissions, while resolving other issues around energy, soil quality, waste management and human health.

Second, **global and national conflict experienced in urban areas impacts FSN through diverse channels, but food insecurity also contributes to global conflict.** Significant conflicts have been increasingly concentrated in major cities (Kaldor and Sassen, 2020; Goodfellow and Jackman, 2023), demonstrating how the dynamics of inequality and identity embedded within the urban built environment can intersect with broader disputes over political control. Urban-based warfare can destroy food outlets as well as critical water and electricity infrastructure needed for food safety. In Burkina Faso, armed conflict reduced local food trading in Sebba by 40 to 50 percent and increased food insecurity within the local population tenfold (Béné *et al.,* 2024). The destruction of transportation routes undermines access on the part of humanitarian agencies to food-insecure populations. The war in the Gaza Strip, which resulted in catastrophic hunger across this heavily urbanized territory (WHO, 2024), is an extreme example of this dynamic. Similarly, the conflict in the Sudan that broke out between the military and paramilitary groups in April 2023 initially centred on the capital, Khartoum, particularly in the industrial centre – the heart of the country's agro processing facilities (Siddig *et al.,* 2023). The fighting in Mali in mid-2023 led to blockades by rebel groups of key northern cities, such as Gao and Timbuktu, preventing food and medicines from entering via traditional trade routes from Algeria and Mauritania (Ibrahim, 2023). Thus, conflict as the cause of food insecurity in urban areas has been well documented. More recently, however, scholars and governments are increasingly recognizing that urban food insecurity, or even threats of food insecurity, causes social instability, which can also contribute to conflict beyond the borders of the original conflict zone (WFP USA, 2017; Sova *et al.,* 2023).

Third, **concentrated urban inequalities affect multiple dimensions of urban FSN** (HLPE-FSN, 2023). For example, in addition to broadly reinforcing urban inequality, gentrification (largely in HIC contexts) also makes access to healthy foods more unequal (D'Odorico *et al.,* 2019; Cole *et al.,* 2023), especially for racial-minority residents and immigrants who face barriers to obtaining culturally appropriate foods (Ong, Skinner and Minaker, 2021). On the other hand, access to healthy foods also influences gentrification. When chain, specialty or boutique food retailers locate in previously disinvested areas, they send market signals that these neighbourhoods are safe, trendy and ready

for further development (Anguelovski, 2015; Cohen, 2018a; Dixon, 2020).

These three brief examples of the bidirectional pathways by which major urban challenges and FSN impact each other illustrate a small number of the many complex pathways that exist. Importantly, the biggest burdens that exist at the intersection of urban and food-system challenges are borne by the most vulnerable groups and individuals within cities. For example, while both climate change (United Nations, 2022a) and conflict (UN Women, 2022) can disrupt food supply chains, impacts of both types of challenges have inequitable impacts on nutrition and health outcomes for women and girls, among other vulnerable groups, and these impacts further concentrate vulnerabilities within cities.

2.5.4 URBAN FOOD-SYSTEM RESILIENCE

A critical question is how U-PU populations can be empowered to be more resilient to shocks, which sheds light on opportunities to transform systems (Hawkes *et al.,* 2022). Tools have been developed to support efforts to build food system-resilience and **some cities have developed detailed resilience plans for particularly vulnerable components of their food systems or plans to build resilience across the entire urban food system.** The UN Office for Disaster Risk Reduction has released a food-system-focused disaster resilience scorecard for cities, which provides ten essential areas for building disaster resilience into food systems. This scorecard provides useful entry points for local governments looking to develop food -system resilience plans (UNDRR, 2022). In New York City, a community-led effort – the Hunts Point Resiliency Feasibility Study (HDR *et al.,* 2016), was carried out, aiming to address the vulnerability of the Hunts Point Area, including the Hunts Point Food Distribution Centre, one of the largest wholesale food distribution centres in the world. Other cities, like Baltimore (Biehl *et al.,* 2017) and Toronto (Zeuli *et al.,* 2018), have created higher-level vulnerability assessments of food systems across the city. However, these in-depth studies have been conducted predominantly in HIC cities. In LMICs where urban food-system resilience work is developing, it is largely supported by external actors and programmes. An example of a city implementing its own plan for food-system resilience is Cape Town, South Africa, where in August 2023, the informal taxi sector went on strike. The strike prevented the safe transport of food into, out of, and within the city by all road users, from supermarket trucks to informal transporters. Within five days supermarket shelves were empty of bakery products, dairy products and fresh produce; informal vendors were unable to access food to sell; and school feeding programs were shut down (Crouth, 2023; Phaliso, 2023). Based on modelling of previous and predicted shocks (COVID-19, electricity crises and political unrest), the city was able to mobilize food-emergency responses to particularly vulnerable communities and work with the private sector to ensure safe passage of food from distribution centres to retailers. Resilience planning and partnerships, therefore, provided some buffer to the crisis event, but this was hampered by limited resources as urban food is still largely framed as an unfunded mandate.

Cities around the world are beginning to create plans to address challenges related to FSN during emergency events (such as the Thunder Bay + Area Food Strategy, 2023), but these are contingent on proper funding and implementation. It is increasingly recognized that it is essential to support social and economic structures that provide buffering. Self-help groups have been shown to provide food security resilience in rural India (Demont, 2022). Similar structures are active in places like South Africa (where they are known as Stokvels) and Kenya (where they are known as Chamas (Wagah *et al.,* 2018; Lukwa *et al.,* 2022). This suggests that **efforts to support collective agency may have long-term food security outcomes for U-PU residents.**

Despite the challenges outlined in this section, cities are also bustling hubs for addressing critical development issues central to a sustainable future (Nature Editorial Board, 2023), and the level of government closest to its people, as discussed in chapters 6 and 7.

2.6 CONCLUSION

Today, cities face interconnected, complex and urgent challenges. Urbanization and peri-urbanization happen differently in HIC and LMIC contexts, and the experiences and outcomes of these processes depend on whether the city is a primate city or secondary city, the level of informality that exists in the region, and the economic, political, environmental and social conditions. Urbanization processes impact food systems and FSN through multiple pathways and the concentration of vulnerabilities in urban areas, and their resulting fragility, make these areas less able to respond to shocks, with implications for FSN.

CHAPTER 3

URBAN AND PERI-URBAN FOOD-SYSTEM ACTIVITIES

New Soweto wholesale market in Lusaka, Zambia, 2018. Traders visit New Soweto Market every day to source fresh products to resell in their stalls and kiosks across the city's more than 60 informal retail markets.

© Danielle Resnick

KEY MESSAGES

- U-PU food-system activities in many parts of the world are diverse and characterized by modern/formal as well as traditional/informal aspects.
- While urban agriculture has received significant policy attention, its regulatory history is complex and there is conflicting evidence regarding its impact.
- Midstream sector activities (logistics, wholesale, transport and processing) are important aspects of U-PU food systems, whose governance impacts FSN outcomes.
- Most urban residents obtain most of their food from markets, both modern/formal and traditional/informal markets. The latter have important benefits and should be strengthened.
- Non-market mechanisms – such as school meals programmes, community kitchens, remittances and food banks – play a key role in addressing the food security needs of people not adequately served by the market. However, these need to be critically assessed in terms of impact on agency.

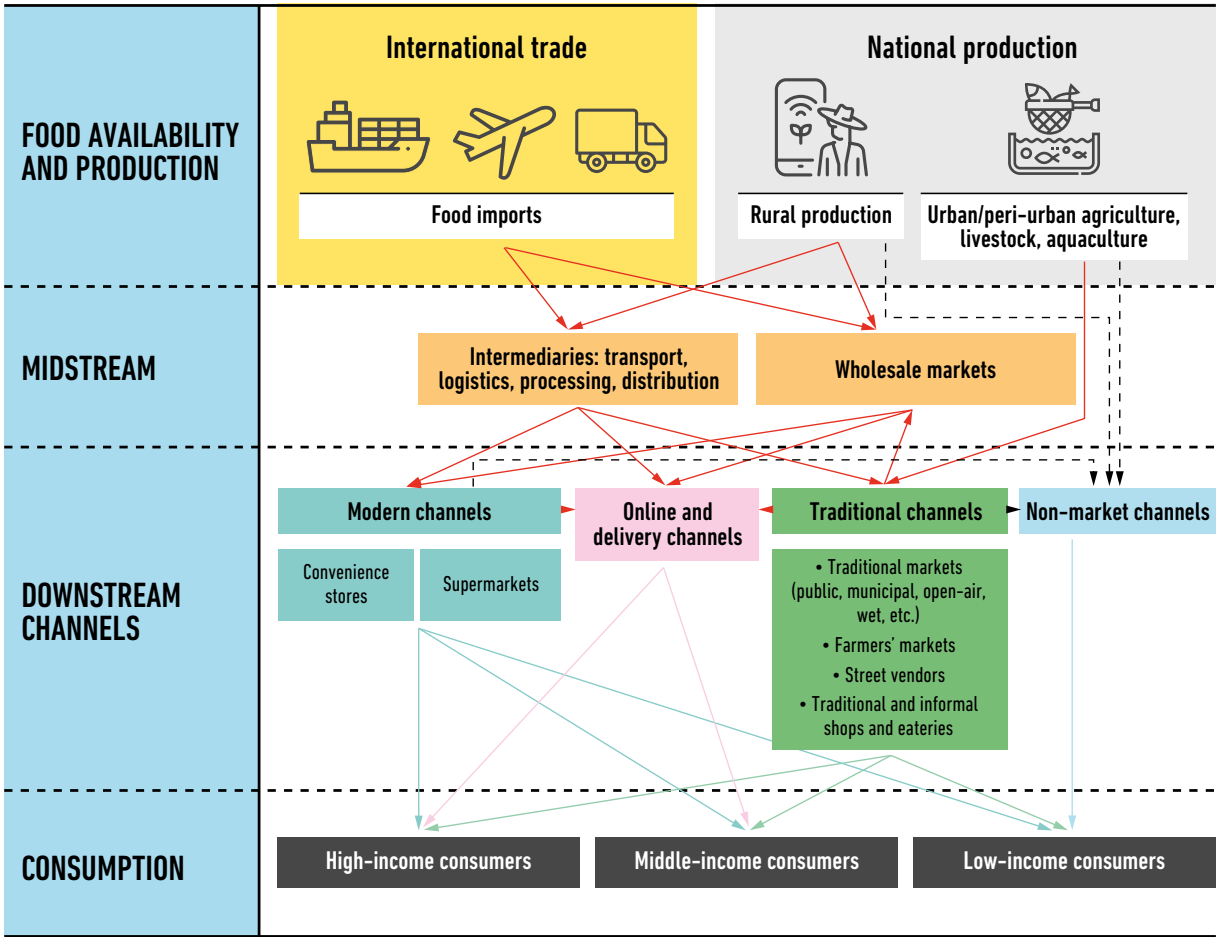
3.1 INTRODUCTION

Urban and peri-urban food systems around the world are diverse and are broadly characterized into formal or informal, and modern or traditional dimensions, across consumption, retail, wholesale, processing, logistics, transportation and production components. Various typologies have been developed to describe these different system components. HLPE-FSN (2017), for example, identifies three types of food systems: traditional, mixed and modern. Such typologies typically present a unidirectional transition from traditional to modern, informal to formal. While a pathway towards modernization has been observed in many parts of the world, the most common reality is a co-existence and complementarity of different forms. Moreover, the desirability of a complete transition to a modernized, formalized food system is unclear in terms of its capacity to ensure food security and promote equity, sustainability and resilience. In fact, **traditional and informal components of food systems are essential for food security and livelihoods in U-PU food systems and should be strengthened.** Figure 5 illustrates the food-system activities addressed in this chapter and demonstrates the multiple pathways food follows from production to consumption.

This chapter analyses the main activities of U-PU food systems, which can be categorized into three main groups: provision and production; midstream activities, including transport, logistics, processing and wholesale; and downstream activities, including retail and services (the latter for both market and non-market food sources). The chapter also addresses non-market food sources and waste. Many of these activities, which are essential for supplying and distributing food to cities, occur beyond U-PU boundaries, which highlights the importance of the rural–urban continuum. Consequently, these activities present a complex set of challenges in terms of effective governance and responsibilities at different levels of government.

This chapter seeks to **outline the specific challenges and opportunities** that each food system activity presents for improving FSN, especially for those who are most vulnerable. **Actions to strengthen food systems should be based on building food systems that are equitable, just and inclusive; productive and prosperous; participatory and empowering; resilient; regenerative and respectful to ecosystem; and healthy and nutritious** (HLPE-FSN, 2020). Strengthening U-PU food systems for improved FSN requires a systemic perspective that goes beyond efficiency and

FIGURE 5
INTERACTIONS IN URBAN AND PERI-URBAN FOOD-SYSTEM ACTIVITIES



Notes: Colours are used to differentiate the various activities discussed in the chapter. Dotted lines indicate that only a small fraction of the production gets from the source to the destination.
Source: Authors' own elaboration, informed by: Tefft, J., Jonasova, M., Adjao, R. and Morgan, A. 2017. *Food Systems for an Urbanizing World. Knowledge Product.* Washington DC, World Bank and Rome, FAO; and by: Moustier, P., Holdsworth, M., Anh, D.T., Seck, P.A., Renting, H., Caron, P. and Bricas, N. 2023. The diverse and complementary components of urban food systems in the global South: Characterization and policy implications. *Global Food Security,* 36: 100663. https://doi.org/10.1016/j.gfs.2022.100663

productivity, and addresses issues related to informality, social justice, gender, climate change, diversity and resilience, concentration of market power, innovation and food safety, among other issues.

Acknowledging informality within U-PU food systems in policies and governance means recognizing the complex set of challenges and opportunities for urban FSN presented by such informality, as well as making visible and understanding informal actors and contexts. Improving food safety in the informal sector is a critical opportunity to enhance U-PU FSN.

Addressing social justice challenges in each U-PU food-system activity means understanding the specific obstacles to improving workers' livelihoods, promoting gender and youth inclusion, and addressing structural inequalities, which often restrict women's access to resources and services and impede their full participation in the food system (Bryan *et al.,* 2024). The ways in which governments engage informality with U-PU food systems has important consequences for the right to food for citizens and the right to the city for these food system actors.

Gender dynamics cut across urban food systems, shaping production, distribution, retailing, consumption and food-security outcomes. Food supply chains rely extensively on female labour, while the distribution of benefits and decision-making authority lie predominantly with men. Informal processing and vending sectors that provide essential food access in cities disproportionately employ women. For example, the informal food sector employs about 74 percent of women in sub-Saharan Africa (Vanek *et al.,* 2014). Moreover, as food sectors modernize and formalize, women tend to be excluded, as better-paid and higher-skilled jobs go to men (Roesel and Grace, 2015). Gender-targeted interventions typically concentrate on ensuring adequate nutrition and reducing domestic violence, rather than supporting women's economic opportunities (Ragasa and Lambrecht, 2020).

Climate-change has impacts across the U-PU food system – not only at the production stage. Small-scale and informal food-system actors, for example in processing, transport and catering, are most vulnerable to its effects (Blekking *et al.,* 2022). Most food and climate-change research and policy interest has focused on food production, overlooking the impact of long-term climate change and extreme weather events on all aspects of food systems. Not all food-system activities and actors are equally vulnerable to climate shocks. For instance, small-scale and informal actors may be less able to mitigate and adapt to climate change. Given the importance of these actors to U-PU FSN, it is vital that urban food policy and governance pay special attention to increasing their adaptive capacity. Locally produced food may provide foo -sourcing resilience should climate and other shocks affect more distant food sources (such as drought in major grain-producing areas) (Blay -Palmer *et al.,* 2021).

Food-system resilience to climate change and other diverse threats, such as pandemics, wars and currency shocks, is enhanced by maintaining systemic diversity (IPES-Food, 2022). Furthermore, low-income consumers can enhance the stability of their food security by ensuring access to food through a variety of market and non-market sources, such as remittances, savings clubs and social networks (Crush and Caesar, 2018; Davies, 2019; Lukwa *et al.,* 2022). Maintaining diversity is, therefore, a critical pathway to ensuring U-PU FSN. This calls for recognizing the many sectors operating within food systems and providing appropriate regulation and support to allow this diversity to survive. While diversity is one key element of building resilient food systems, it is far from the only entry point. Good governance, improving coping strategies along the supply chain, investing in context-appropriate technologies and tools, and developing integrated early-warning plans are critical entry points to build U-PU food -system resilience (UNDRR, 2022; International Food Policy Research Institute, 2023).

The high concentration of market power across various activities in food supply chains **is linked with (though not the sole driver of) the heightened fragility** of urban food systems in the face of a range of shocks, including global and local shocks (Hendrickson, 2015; Rotz and Fraser, 2015; Davis, Downs and Gephart, 2020; Clapp, 2023). Specifically, when food flows are streamlined with minimal redundancy and strong coordination, there are fewer fail-safe mechanisms and limited buffering capacity, resulting in reduced capacity for adaptation or recovery in case of disruptions. Conversely, competitive markets with numerous suppliers can help ensure a continuous flow of goods and services, thereby mitigating the effects of shocks (Eakin, 2010).

The concentration of market power is intensified by the integration of both downstream suppliers and upstream market actors, primarily driven by corporate strategies aimed at maximizing shareholder returns, often at the expense of dietary and food-security outcomes (Barrett *et al.,* 2022; Wood *et al.,* 2023a). **Market concentration has also been associated with the rolling back of state control of U-PU food systems, which reduces traceability and regulatory power** as large companies and

powerful actors are unwilling to share their data (Clapp, 2023).

Support for innovation for small and medium-sized businesses along the food chain has been encouraged for years. However, several authors have raised concerns about its real inclusive potential for marginalized producers and consumers (Schoneveld, 2022; Schouten and Vellema, 2019; Ros-Tonen *et al.,* 2019; Blowfield and Dolan, 2014). To contribute to the transformation of urban food systems, such innovations should be geared towards adopting sustainable, rights-based (Gupta and Pouw, 2017) and consumer-centric approaches to ensure inclusive access to productive resources and affordable healthy diets.

Food safety has been articulated as a critical challenge in U-PU food-system activities (Henson *et al.,* 2023). This is linked to both the limited capacities of individual actors in the food systems (producers, vendors, etc.) and external infrastructural factors (including water quality and access to waste management).

3.2 FOOD PROVISION AND PRODUCTION

Urban and peri-urban areas source food from **urban and peri-urban agriculture, from adjacent rural regions and from other cities, as well as through imports.** In many parts of the world, much of the food consumed in cities comes from beyond their borders, where local city governments have limited control. As indicated in the SOFI 2023 report, "Only around 30 percent of urban residents worldwide are estimated to fulfil their demand for specific crops locally (approximately 100 km radius). The majority of urban food demand, about 80 percent, is supplied regionally (within a 500 km radius)" (FAO *et al.,* 2023a, p. 57).

In most HICs, and in Asia and South America, food consumed is mostly produced within national borders and traded domestically (FAO *et al.,* 2023b). **However, 77 out of the 106 developing countries in the world, mostly in Africa and the Near East and among the Small Island Developing States, are net food importers** (FAO, n.d.). According to the OECD–FAO Agricultural Outlook, roughly 70 percent of all food commodities consumed in the Near East and North Africa are imported (OECD/FAO, 2023). There is a trend of increasing food imports in most parts of the world that affects the stability and sustainability of food security in the face of increasing global-scale shocks and conflicts (Elbehri, 2013; Karg *et al.,* 2016, IPES-Food, 2022; United Nations, 2022b).

The sources that an U-PU area draws its food from – its foodshed – vary significantly depending on the agricultural potential of surrounding areas; the composition of the main food supply chains; the areas' population size, density and income; and the status of transport and other infrastructure, among other factors. This foodshed commonly extends beyond national borders.

This section considers **four critical sources of U-PU food supply,** each with its own contribution to U-PU FSN and each with specific governance and policy implications: U-PU agriculture (UPA), city region/territorial production, national production and international trade.

3.2.1 URBAN AND PERI-URBAN AGRICULTURE

Since the early 1990s, UPA has gained significant importance in discussions, research and implementation initiatives (Yan *et al.,* 2022) as a promising entry point for addressing escalating urban challenges, including food insecurity, climate change, unemployment, lack of social cohesion and resilience (van Veenhuizen and Danso, 2007; Santo, Palmer and Kim, 2016; Orsini *et al.,* 2020; Erwin, 2022; FAO, Rikolto and RUAF, 2022; Pradhan *et al.,* 2023). However, UPA continues to be a source of contention, sparking debates regarding land use and water, access to technology, food safety and environmental impact (Abu Hatab *et al.,* 2019, Hawes *et al.,* 2024).

Much of the policy and NGO work on UPA focuses on small-scale commercial and home

production. Although figures on actual (Mok *et al.,* 2014) or modelled (Clinton *et al.,* 2018) contribution of UPA include larger-scale commercial agriculture in UPA areas, the focus of this section is mainly on smaller-scale UPA activities, as this is where most policy engagement on UPA focuses.

UPA opportunities and potential: food security, livelihoods, social cohesion, environment

Although, overall, the empirical evidence on the benefits of UPA for food security is inconclusive (Crush, Hovorka and Tevera, 2011; Frayne, McCordic and Shilomboleni, 2014; Badami and Ramankutty, 2015; Khumalo and Sibanda, 2019), there is evidence of its positive contribution to FSN in LMICs, through enhancing access to more diverse diets, especially through the provision of vegetables (Zezza and Tasciotti, 2010; Stewart *et al.,* 2013). Despite the fact that most UPA policy and research has focused on crop production, urban livestock and aquaculture can also play a critical role in generating income and enhancing food security, especially in LMIC urban settings (Wilson, 2018; Abu Hatab, Cavinato and Lagerkvist, 2019; Kadfak 2020; Rivero *et al.,* 2022, de Zeeuw and Drechsel, 2015).

Urban farming can also be an effective coping strategy in urban poor settings, especially in extreme vulnerability; for instance during global food-supply-chain shocks, as was the case during the COVID-19 pandemic (Kimani-Murage *et al.,* 2022). In addition, **UPA can strengthen urban food systems and development through social empowerment and community cohesion** (Orsini *et al.,* 2020; Pradhan *et al.,* 2023), and contribute to educating young generations about agricultural practices, nutrition and rural culture (Paffarini *et al.,* 2015). From an **environmental perspective, UPA has the potential to act as a catalyst for preserving and expanding green spaces within and around cities,** where pollination and biodiversity can be enhanced. Finally, recent occurrences of shocks, crises, conflicts and emergencies have underscored **UPA's role in building resilience in urban food systems.** UPA's shorter supply chains with fewer intermediaries provide citizens with accessible food sources during global food-system disruptions (Blay-Palmer *et al.,* 2021). It is essential to note, however, that short supply chains are more vulnerable to local disruptions.

UPA challenges and obstacles: access to land and technology, gender equality, food safety and public health

Land availability is one of the most serious constraints for UPA, particularly within low-income communities. Globally, rapid urban sprawl has led to a continuous shift in land use, decreasing the area of agricultural land in both the inner city and urban peripheries (Kuusaana *et al.,* 2022; Zhong *et al.,* 2023). **Limited access to secure land forces urban farmers to use more marginal lands** in public areas, where they face threats of encroachment and eviction and increased exposure to climate-related risks, such as flooding (Ayambire *et al.,* 2019). In regions with intricate regulatory history, such as many sub-Saharan African countries, this trend is further compounded by **long-term issues such as complex and unequal land-tenure systems and outdated policy prohibitions** (Davies *et al.,* 2021; Vidal Merino *et al.,* 2021).

While technological innovations can catalyse the potential of UPA, access to technology, capital and training is less available to the most vulnerable groups and to projects that address the needs of the most food insecure. Emerging technologies, such as vertical farming, building-integrated agriculture, rooftop agriculture and controlled-environment agriculture, have the potential to facilitate efficient production (Armanda, Guinée and Tukker, 2019; Yuan *et al.,* 2022). Hydroponic and aeroponic systems, often integrated in these setups, provide precise nutrient and water delivery (Barbosa *et al.,* 2015). Advanced innovations are more popular in HICs. However,

BOX 3

SACK FARMING TECHNOLOGIES TO TACKLE FOOD INSECURITY FOR SLUMS IN NAIROBI, KENYA

Kibera in Nairobi, one of the largest and most populated slums in sub-Saharan Africa, has been suffering from a lack of land, water and labour resources. Among the local UPA activities implemented to improve food security and generate income, sack farming has been a popular technology, making it possible to produce food in small open spaces using large sacks filled with soil. This technology is very accessible for the urban poor, as the investment required is small and the technology requires only commonplace materials (plastic sacks, soil and stones) and simple, local farming knowledge. In a pilot project on sack farming, 95 percent of the participants expressed willingness to continue using the technology. The number of local households adopting sack farming and benefiting from this practice in access to fresh food and income generation continues to increase.

Source: Authors' own elaboration, based on: Peprah, K., Amoah, S.T. and Akongbangre, J.N. 2014. Sack Farming: Innovation for Land Scarcity Farmers in Kenya and Ghana. *International Journal of Innovative Research & Studies,* 3(5); and on: Zivkovic, A., Merchant, E.V., Nyawir, T., Hoffman, D.J., Simon, J.E. and Downs, S. 2022. Strengthening Vegetable Production and Consumption in a Kenyan Informal Settlement: A Feasibility and Preliminary Impact Assessment of a Sack Garden Intervention. *Current Developments in Nutrition,* 6(5): nzac036. https://doi.org/10.1093/cdn/nzac036

in some cases, they also widen inequalities and increase the vulnerabilities of marginalized groups (UNESCAP, 2018). In fact, **among low-income communities, many of these technologies and innovations are inaccessible because of their limited access to finance and capital for investments,** and to training and extension services (FAO, 2022a). Identification and promotion of accessible and feasible technologies is therefore a priority in leveraging the potential of UPA for the urban poor. Box 3 describes an example of context-appropriate technology and innovation – sack farming.

While data from several countries show that **women are the majority** among urban farmers, in some contexts, men who have more access to land and resources predominate in urban-agriculture activities (Hovorka, de Zeeuw and Njenga, 2009). Gender significantly shapes the distribution of resources between women and men within food systems, and women frequently face numerous constraints, including gender stereotypes and social restrictions, all of which influence their share of resources and responsibilities (Tanumihardjo *et al.,* 2020).

Another key challenge associated with UPA is food safety. In areas with limited freshwater resources for irrigation, especially where urban water infrastructure is inadequate, water contamination becomes an additional issue in UPA (Scott, Faruqui and Raschid-Sally, 2004; Paltiel *et al.,* 2016).

Raising livestock in urban areas can also pose significant environmental risks and public-health hazards, particularly in the absence of proper sanitation and infrastructure (Abdulai, Dongzagla and Ahmed, 2023; Chand, 2023).

Towards a new vision: urban agroecology

The concept of UPA is as broad as agriculture itself, ranging from subsistence and organic farming to intensive or industrial agricultural methods (Schmutz, 2017). Agroecological principles can harness the potential of UPA (Bolat and Deneri, 2022). Urban agroecology contributes to realizing the right to food by establishing autonomous, sustainable food systems that reduce dependence on distant global markets and promote dietary diversity (Pimbert, 2017). Urban agroecology is a practice that, in ecological terms, is based on respect for all forms of life and the conservation of land; in social terms, it thrives on mutual support, learning and respect for cultural differences;

and in political terms, it is integrated into a network of movements for food sovereignty, justice and equitable access to resources and benefits (Tornaghi and Hoekstra, 2017). These principles lead to improvements in nutrient cycling and soil fertility, promote water and soil conservation, and facilitate pest regulation – all key factors in improving the productivity of urban agriculture. In fact, while conventional urban agriculture may produce less than 1.5 kg of fresh food per square meter per year (or up to 6 kg per square meter per year under intensive production models), urban agroecology experiences can yield between 15 and 20 kg per square meter per year (Altieri and Nicholls, 2018). From a political perspective, urban agroecology is particularly relevant for the case of urban agriculture, which runs the risk of becoming an exclusive practice due to the high cost of land in cities (Bolat and Deneri, 2022).

3.2.2 LOCAL AND TERRITORIAL FOOD LINKAGES

Cities' foodsheds involve a mix of local, regional and distant sources, from national production to international trade. While globalized and industrialized food supply chains have become longer and more efficient, they have also produced food systems that are unsustainable, vulnerable to disruptions and shocks, and socially exclusive, particularly excluding smallholder farmers, as well as workers and small and medium sized enterprises along the food supply chain (FAO, 2020b; HLPE, 2020; UNIDO, 2020). This has led to a growing focus on and advocacy for **localized food sources and supply systems,** especially in large cities (FAO, 2020b), as typified in the city region food system or territorial food system approaches. **Territorial food systems,** defined as food systems located within specific geographical areas, often at local or regional scales in contrast to the industrialized food systems at national or global scales, **are increasingly recognized for their contribution to food security, human health and sustainability** (Rochefort *et al.,* 2021). However, in many cases, territorial food systems are poorly understood and managed by local and regional governments, which often lack the necessary mandate, jurisdiction and technical capacity (Forster and Matthiesen, 2016).

Efforts to conceptualize, assess, promote and develop a policy agenda on territorial food systems are continuously emerging. Current approaches include Alternative Food Networks (AFNs) (Maye and Kirwan, 2010; Edwards, 2016), short food supply chains (SFSCs) (Augère-Granier, 2016; Paciarotti and Torregiani, 2021), the Urban Food Agenda, the Green Cities Initiative, and City Region Food Systems (FAO, 2023b). These **approaches share the common goals of promoting localized food systems, strengthening producer-consumer connections, and considering social and ecological impacts.**

One significant aspect of these approaches is **the emphasis on strengthening rural-urban linkages.** This involves facilitating the flow of various resources across rural, peri-urban and urban areas, including commodities, production, people, capital and income, and information. By fostering such interconnectivity, both rural and urban areas can mutually benefit and advance towards integrated development (Blay-Palmer *et al.,* 2018).

It is important to note that this **normative notion of a localized foodshed will not necessarily deliver resilient, more sustainable and just food systems on its own** (Born and Purcell, 2006, Wood *et al.,* 2023b). Indeed, evidence from Kampala indicates that high-income residents are more able to benefit from a more local foodshed than lower-income residents, since they have better access to peri-urban land for production (Hemerijckx *et al.,* 2023). Lower-income residents are often only able to afford cheap, imported basic foodstuffs, while higher-income residents are able to access more diverse diets. **In the interest of equitable food security, the pursuit of territorial food systems must also continue to acknowledge the role of wider national and international food sources and the impact that these may have on localization efforts and on food security for more vulnerable residents** (Soma, Hennen and Van Berkum, 2023, Wood *et al.,* 2023b).

3.2.3 NATIONAL FOOD PRODUCTION

In many countries, particularly HICs, and in Asia and South America, most food consumed in U-PU areas comes from within national boundaries, but beyond the immediate hinterland of urban areas (FAO , 2023a). This production is determined by national agricultural policies. As noted in Chapter 1, these policies have often focused on ensuring access to affordable staples, rather than being driven by nutrition or sustainability concerns. **As major markets for national agricultural production, urban areas shape demand, but typically do not yet play a significant role in shaping agricultural policy, particularly in LMIC contexts.**

3.2.4 INTERNATIONAL TRADE

International trade is an important aspect of U-PU food systems. While international trade is often considered in terms of trade flows (like the supply of wheat from the Black Sea area to African countries) (Mottaleb, Kruseman and Snapp, 2022), **a large proportion of international trade is intraregional, formal and informal food trade** (Karg *et al.,* 2016, 2023; SWAC/OECD, 2021). **This adds complexity to the framing of territorial food systems and approaches to their governance, as these territorial systems cross national borders.**

The import of staple foods from diverse origins enables access to lower and more stable prices than sourcing foods from a single location (Gilbert *et al.,* 2024). There are, however, **concerns that the correlation between urbanization and increased demand for imported foods may contribute to a nutrition transition** towards diets including more processed products (Glopan, 2020; Baker *et al.,* 2020). There has been little attention paid to the potential role of urban policy in shaping these trading patterns. Box 4 discusses how trade and investment agreements shape cities' diets.

BOX 4

HOW GLOBAL TRADE AND INVESTMENT AGREEMENTS ARE SHAPING CITIES' DIETS

Trade and investment have long shaped urban food systems. Pathways of influence have included the creation of urban hubs for import and export, dependence on food imports to meet growing urban food demand, and foreign direct investment by multinational food companies (Thow and Snowdon, 2010; Gillespie and van den Bold, 2017). Food trade can support food security and dietary diversity in urban areas (Gillson and Fouad, 2014; Brooks and Matthews, 2015). However, dependence on food imports can leave urban consumers vulnerable to global price shocks and other shocks (Bezuneh *et al.,* 2009). Trade and investment liberalization is also associated with the nutrition transition in urban areas (Thow, 2009; Bishwajit, 2014), mediated through factors such as increases in fast-food retail (Baker, Kay and Walls, 2014) and higher affordability and availability of sugar-sweetened beverages and highly processed foods (Hawkes, 2010; Mendez Lopez *et al.,* 2017).

In the Pacific region, with its relatively recent colonial history and trade liberalization, key pathways through which trade and investment liberalization can shape cities' diets are apparent (Thow and Snowdon, 2010). In response to a shift to export-oriented agriculture, administrative centres for trade and commerce were created, catalysing urbanization in the region. These changes catalysed a shift away from traditional diets, and a growing dependence on imported foods, particularly in urban areas (Andrew *et al.,* 2022). Financial integration and investment-related policy liberalization, in turn, enabled the growth of food processing, formal food retail and quick-service restaurants.

Trade and investment agreements also shape the urban food-policy space. These agreements can place constraints on policies that impact food imports, exports and investors, and can thus limit the policy options

that governments have to preferentially support equity in access to food and healthier food (Garton, Swinburn and Thow, 2022). In an urban food context, trade and investment agreements may intersect with land policy, with policies that seek to support and empower small and medium enterprises, and with policies that protect producers and manage markets.

Trade and investment agreements may seem far from the remit of urban food governance. However, there are three opportunities for cities to engage with trade and investment agreements, to support efforts to redirect their food systems towards ensuring food security and healthier diets. First, as cities look to raise the priority of food-system objectives across all facets of urban governance, there is an opportunity to build capacity among policy actors to recognize and engage with the multiple points of interface with trade and investment policy. Second, investment incentives – such as grants and other support – are often offered at the subnational level. Aligning incentives for food-related investors with urban food objectives – for example, prioritizing nutritional quality and equity – is thus within the remit of the state and city governments. Finally, national negotiating positions for trade and investment agreements are strongest when negotiators understand the experiences and imperatives of other sectors, including urban planners and communities. Creating mechanisms that enable feedback and information sharing between levels of government – from communities and cities to provinces and the national level – can help ensure that the domestic policy space for urban food governance is protected in trade and investment agreements (Thow, Wijkström and Wolff, 2023).

Patterns of national production and international trade are shaped by diverse, interacting factors. For example, until the 1980s the Philippines was a net rice-exporting country, but due to repeated climate-change events, poor road conditions and a decline in yields, this exporting trend was reversed. The country has become increasingly dependent on rice imports from Thailand, which in turn, has experienced reduced national demand as the growing middle class is reducing its rice consumption (Pingali, Hossain and Gerpacio, 1997; Dawe, Moya and Casiwan, 2006; Pingali, 2007, 2023).

With the rising middle class in Asia and climate-change shocks becoming more frequent, regional cross-border trade will play a crucial role in mitigating food insecurity, but may also increase access to highly processed, imported foods. Furthermore, increased import dependency may undermine local food systems (Brewer *et al.,* 2023).

3.3 MIDSTREAM: TRANSPORT, LOGISTICS, PROCESSING, DISTRIBUTION AND WHOLESALE

The **complex interplay of activities and actors – transport, logistics, processing, distribution and wholesale, people and businesses** – involved in the midstream and supplying and distributing food to urban areas, is under-researched and not well understood, especially in traditional contexts where informality prevails (Reardon, Liverpool-Tasie and Minten, 2021). The midstream is particularly important for U-PU food systems, as often these activities are concentrated in cities and neighbouring areas that act as hubs for processing, transport and retail of food products. However, the lack of data and awareness frequently results in policy gaps and/or policies and of private and public investments addressing the midstream section (FAO, 2023c). Moreover, the fact that **many of these activities operate both within and beyond urban areas presents a significant challenge** in coordinating policies among different levels of government – local, state

and national. Additional challenges in traditional contexts, where there are high degrees of informality, are often dealt with through a punitive law enforcement approach that fails to recognize the important role of midstream food activities in these contexts and to support to their operations.

3.3.1 INTERMEDIARIES

The **urbanization of food systems expands the scope of midstream activities, introducing additional intermediaries** who facilitate the distribution of agricultural and food products along the supply chain, connecting producers to urban consumers (Bricas, 2019). These include actors working in gathering, preparation, packaging, storage, transportation and distribution. Until recently, **the roles and functions of intermediaries within urban food systems have typically been inadequately researched and largely absent from policy discussions** (Hussein and Suttie, 2016; Scoones, 2023). Urban policymakers have customarily concentrated their attention extensively on the two ends of the urban food supply chains – production and retail – while widely ignoring other midstream elements and actors (Reardon, Liverpool-Tasie and Minten, 2021). Especially in the context of LMICs, intermediaries have often been framed by policymakers as opportunistic parasites who exploit the limited market awareness and bargaining power of small-scale agrifood producers (Lerner, 1949; Abu Hatab, Krautscheid and Boqvist, 2021; Koshy *et al.,* 2021). This negative perception regarding intermediaries in U-PU food systems has created a "missing middle" within urban food policies and research endeavours (Sonnino, Tegoni and De Cunto, 2019; Veldhuizen *et al.,* 2020).

A suite of factors related to the characteristics of the intermediary sector of U-PU food systems and the governing institutional framework explain the missing middle phenomena. For instance, activities within the intermediary sector are subject to regulations and oversight at city, regional and national levels. This multilayered regulatory landscape poses a significant challenge for city authorities, as it complicates their efforts to seamlessly integrate these intermediary activities into local policymaking processes (Gaspard, 2020). Informality, which dominates many of the intermediary and agrifood enterprise interactions across U-PU food systems, especially in LMICs (Moustier *et al.,* 2023), presents a governance dilemma for urban policymakers, in addition to keeping activities uncounted in national statistics.

This governance ambiguity, together with low logistical and financial capacity, increases the relative vulnerability of intermediaries to exogenous shocks (Balezentis *et al.,* 2023). For instance, unregistered and unlicensed agrifood activities were excluded from stimulus plans that governments offered to help enterprises navigate the impacts of the COVID-19 pandemic (Lu *et al.,* 2020; Abu Hatab, Lagerkvist and Esmat, 2021; Béné *et al.,* 2021).

Assembly markets, storage facilities, processing and food transport are particularly delicate functions. Inefficiencies in executing them and providing the necessary services can escalate costs and result in post-harvest losses (Lehmann, 2018). First, there are insufficient well-established rural and peri-urban **assembly markets** for consolidating food products. This means that intermediaries and agrifood enterprises must collect agricultural produce from numerous scattered smallholder farmers, incurring significantly higher expenses (Owuor *et al.,* 2017). Second, extended urban food supply chains require adequate **storage facilities** to minimize loss, ensure food safety, and ensure a continuous food supply. Constructing and operating the necessary cold-storage facilities comes with substantial costs for intermediaries (Yadav *et al.,* 2022). Third, **food processing** requires a consistent supply of raw materials, appropriate processing technology, infrastructure and facilities (including suitable packaging options), and the necessary management skills and marketing strategies (Colonna, 2021; Salem, Amin and Gammaz, 2023). **Transporting food** within cities and urban centres to reach retail markets can also be challenging and expensive, especially for perishable products, due to issues such as traffic congestion, limited parking availability and extended distances (Zimmerman, Zhu and Dimitri, 2018).

Despite the numerous challenges faced by various actors and enterprises in the midstream sector of urban food value chains, **there has been a lack of public and private investment commensurate with the level required to address these challenges** (Horst and Watkins, 2022; Nash, 2023).

3.3.2 PROCESSING

Food processing is a critical aspect of U-PU food systems. Local processing provides opportunities for consumers to access foods from more local production (Mekonnen *et al.,* 2023 Termeer *et al.,* 2024). In Africa in particular, the small-scale milling sector is crucially important for U-PU consumers. Consumers often buy small quantities of freshly milled maize to meet consumption needs, or bring locally produced whole maize to the millers (Andam *et al.,* 2018; Theriault *et al.,* 2018; Jenane, Ulimwengu and Tadesse, 2022). This not only ensures that maize meal can be purchased in small-unit sizes affordable to poor U-PU consumers, but also provides a pathway for locally produced product to be used in U-PU areas. However, in many cities these millers operate outside the formal processes. A study conducted in Epworth, a peri-urban area outside of Harare (Zimbabwe), found 90 grinding mills in operation, only nine of which were technically legal, and virtually all contravened planning codes (Toriro, 2018). In Zimbabwe, milling is only legally permissible within industrially zoned areas (Jayne and Rubey, 1993). This implies a vision of a food system that is highly formalized and operating at an industrial scale. As a result, most of the city's hammer mills are "illegal" and the millers are vulnerable to being closed down, fined or even prosecuted (Toriro, 2018).

Aside from planning, there are other factors that privilege large-scale processors over small-scale processors. For example, in many countries, maize fortification mandated by the government is carried out by major processors, which not only privileges them over small-scale millers, but also potentially prevents the most food insecure from benefiting from fortification. The NGO Sanku has been working with small-scale millers in Tanzania and Kenya, providing them with fortification tools and training in order to enhance both nutrition and the viability of these businesses (WFP, 2023c).

U-PU areas also serve as hubs for food processing, which is a major source of employment and livelihoods, particularly for youth (Dolislager *et al.,* 2021). Traditionally, food processing activities have often been associated with women, particularly in informal settings and for sale in local markets, although this varies depending on cultural, social and economic factors (Blay-Palmer *et al.,* 2018; Linderhof *et al.,* 2019; Visser and Wangu, 2021). However, gender inequality persists in the food processing sector of urban food systems due to entrenched social, economic and cultural factors (Riley and Dodson, 2020). Women frequently face barriers in accessing crucial resources such as capital and technology needed to establish and expand food processing enterprises (Ilieva, 2017; Dinku, Mekonnen and Adilu, 2023). Unequal pay and recognition further exacerbate disparities, with women often receiving lower wages and less acknowledgment for their contributions compared to men (Sango, Lusweti and Fabricci, 2023). Discriminatory social norms and practices perpetuate gender discrimination in the urban food processing sector, hindering women's access to employment and decision-making roles (Riley and Hovorka, 2015; Halliday *et al.,* 2020; Bergonzini, 2024). However, it is important to recognize that gender roles in urban food processing are not static and can evolve over time in response to changing social norms, economic opportunities, and policy interventions (Farhall and Rickards, 2021; Bryan *et al.,* 2024).

3.3.3 WHOLESALE MARKETS

Although wholesale markets and other sites where food is aggregated (such as abattoirs and milk collection centres) play a crucial role in food security in cities, **policy focus has primarily revolved around their efficiency and safety,** with little attention given to a more comprehensive vision of their role in U-PU food systems and to their overall governance (Ripol and Martín Cerdeño, 2010).

Efficient operations and the improvement of operational aspects are key needs, particularly for cities with more traditional and informal

activities. Wholesale markets have not kept pace with growing food demand in cities, as many of them were constructed decades ago and are now situated in areas transformed by urban expansion into densely populated central locations (Balineau *et al.,* 2021). This exacerbates traffic congestion and hinders market expansion. Furthermore, on-market storage facilities, especially cold storage, are both inadequate and poorly managed. Revenues generated from market fees are not reinvested in upkeep, expansion or improved services (FAO/FLAMA, 2022).

But **wholesale markets have the potential to play a significant role in transforming food systems** by creating stronger connections with local small-scale producers and providing greater access to healthy diets (Bruno *et al.,* 2022). Wholesale markets can also improve the viability of small shops and restaurants by providing foods at lower and more predictable cost (Moragues-Faus *et al.,* 2020).

Rapid urbanization brings opportunities to realize the potential of wholesale markets. The increased concentration and density of population can generate economies of scale that may lead to logistical, transportation and trade improvements, enabling wholesalers and retailers to add value to their products (Leal Londoño, 2011). Additionally, it enhances the capacity of wholesale markets to offer food from diverse sources and to concentrate more food suppliers and buyers within specific territories, promoting competition and helping improve prices for the population (Cadilhon *et al.,* 2003).

However, parallel to rapid urbanization, there has been greater market concentration along the food supply chain (Proctor and Berdegué, 2020; Clapp, 2021). In particular, the rapid growth of supermarkets – present on all continents and becoming an increasingly multinationalized (foreign-owned) and consolidated sector – has decreased the importance of wholesale markets in food distribution (Reardon, 2011). Furthermore, most efforts have solely concentrated on logistical improvements and information flow management, ignoring other needs. However, emerging work from the FAO, World Union of Wholesale Markets, GAIN and others is broadening the focus to address issues of governance, urban planning, access to diverse and healthy diets and the inclusion of small-scale farmers and artisanal fishermen, as well as increased access to diverse and healthy diets (Carrara *et al.,* 2022; FAO/FLAMA, 2022).

3.4 RETAIL AND FOOD-SERVICE SECTOR

Urban residents obtain up to 90 percent of their food from market sources, both formal and informal, which encompass a mix of modern and traditional outlets (Maxwell *et al.,* 2000; Frayne, McCordic and Sholomboleni, 2016; Opiyo and Ogindo, 2018). The food-retail and food-service sectors comprise a wide spectrum of outlets, including traditional channels (usually more informal), modern channels (usually formal), online food retail and delivery services, and non-market mechanisms, as shown in Table 3. This typology is not globally comprehensive or fixed, but represents the major channels serving U-PU populations.

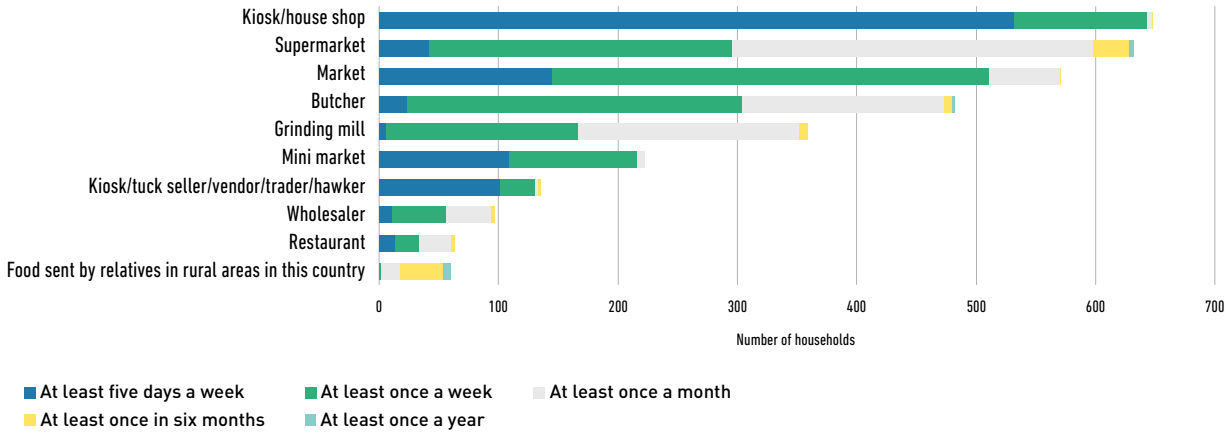
Each of these forms of food retail has characteristics that serve the U-PU food needs in different ways, with some subpopulations more dependent on some forms than others. The market channels also sell different product types, in terms of levels of processing and degree of local sourcing. Typically, in LMICs, lower-income residents purchase a greater proportion of their foods through traditional or informal channels, with higher-income residents purchasing more through modern, formal channels (Battersby, 2019a; Wertheim-Heck, Raneri and Oosterveer, 2019). However, higher-income residents also continue to use informal markets (Riley, 2020). Increasingly, urban residents use supermarkets for big, monthly purchases of shelf-stable foods and other groceries, and make smaller, day-to-day purchases from smaller and informal vendors (Figure 6 and Figure 7) (Riley, 2020; Wertheim-Heck and Raneri, 2020.; Kazembe, Crush and Nickanor, 2022), generally including fresh produce and culturally-appropriate foods unavailable through formal retailers, as well as cooked foods. Urban residents also purchase from these smaller and informal vendors when income is limited, as they often sell in small units and will even extend credit to known customers, meeting food security needs in times of scarcity.

TABLE 3
FOOD-RETAIL AND FOOD-SERVICE CHANNELS

TYPE OF CHANNEL	EXAMPLES	MAIN CHARACTERISTICS
Traditional	Traditional markets (including public and municipal markets; informal markets; open-air and wet markets; temporary, mobile and farmers' markets); street food vendors; and traditional or informal shops, grocers and eateries.	Diverse; typically informal; varying in form based on region, city size and specific characteristics of supply chains and local food systems.
Modern	Supermarkets (including hypermarkets and discount stores), convenience stores.	Usually formal; experimenting a rapid rise in different regions of the world, in many cases replacing traditional channels.
Online and delivery	Online food ordering and delivery services; community-supported agriculture drop-offs and deliveries.	E-commerce, digital platforms and apps are surging in popularity, especially since the COVID-19 pandemic.
Non-market	Food procurement (school meals and others); community kitchens; food banks.	Usually focused on addressing the food-security needs of those not served adequately by market channels.

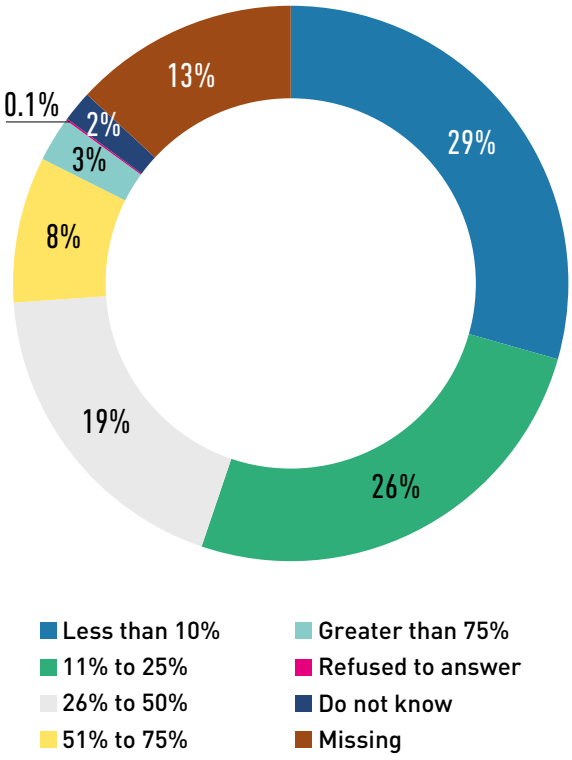
Source: Authors' own elaboration, based on: Global Panel on Agriculture and Food Systems for Nutrition. 2016. Food systems and diets: *Facing the challenges of the 21st century.* London; and CSM (Civil Society and Indigenous Peoples Mechanism). 2016. Connecting Smallholders to Markets: an analytical guide. Rome. [Cited 15 February 2024]. http://www.csm4cfs.org/connecting-smallholders-markets-analytical-guide/

FIGURE 6
TEN MOST FREQUENTLY USED SOURCES OF FOOD, KISUMU, KENYA, 2016



Notes: Households were asked to identify all sources of food used by the household in the previous year. This included both market and non-market sources. The legend represents how frequently used this source. The 840 household sample – drawn from Kisumu's total population of 100 000 households – provides a confidence interval of 7% and the 95% probability level.
Source: Battersby, J. and Watson, V. 2018. Addressing food security in African cities. *Nature Sustainability,* 1(4):153–155. https://doi.org/10.1038/s41893-018-0051-y

FIGURE 7
PROPORTION OF TOTAL FOOD PURCHASED BY HOUSEHOLDS SOURCED DIRECTLY FROM SUPERMARKETS, KISUMU, KENYA, 2016



Notes: Households were asked what proportion of food purchased by the household was directly sourced from supermarkets. The 840 household sample – drawn from Kisumu's total population of 100 000 households – provides a confidence interval of 7% and the 95% probability level.
Source: Battersby, J. and Watson, V. 2018. Addressing food security in African cities. *Nature Sustainability,* 1(4):153–155. https://doi.org/10.1038/s41893-018-0051-y

Gender inequalities are systemic within retail in developed and developing countries (Barrientos, 2019). Men are predominant in the managerial categories and in permanent and supervisory work at every tier, while women are more often employed in similar numbers to men but predominate in the lower levels of temporary, waged work, where work is less well remunerated and more insecure. Gender inequalities also shape women's roles in traditional value chains, where they risk being out-competed by men due to men's greater control over trade assets. There is evidence of men taking over parts of a value chain as profitability increases and pushing women out in traditional markets of Africa, Asia and Latin America. Women frequently experience lost opportunities and weaker bargaining positions, as their interactions with traders and wholesalers are typically intermediated by men (Westholm and Ostwald, 2020).

Making these markets and other food outlets work better for food-insecure residents should be at the heart of efforts to strengthen U-PU food systems. This entails working with traditional and informal markets to create an enabling environment, at the same as managing formal retail-sector aspects. Local governments typically govern policies, regulations and programmes that shape informal and formal retail markets. **Maintaining diversity in food retail increases the resilience of U-PU households,** but also of U-PU food systems overall, as diverse practices and supply chains offer resilience to shocks that can impact food systems at various points. Maintaining local supply chains insures against the impacts of global shocks, but, similarly, drawing on some more geographically diffuse food sources insures against the impacts of local shocks.

3.4.1 TRADITIONAL CHANNELS

Although traditional channels – such as traditional markets, street food vendors and traditional or informal shops and eateries – have significant potential to enhance affordable access to diverse and healthy food, they have been neglected, if not altogether discouraged, by policymakers. The high dependence on these channels by the poorest U-PU residents means that their continued presence is central to the responsibility of governments of respecting and protecting the right to food. Support for or repression of these often marginalized food-system actors can in fact enable or undermine the right to the city.

Traditional markets

Traditional markets encompass a broad spectrum of marketplaces (WHO, 2023a) that serve as essential venues for the commercial exchange of food products, often including prepared meals and various other goods. This broad category includes public and municipal markets; open-air and wet markets, and other informal markets; as well as street, temporary, mobile and farmers'

markets. The nature of traditional food markets varies significantly depending on factors such as city size, distance from producers, income levels and the specific features of local food systems. These markets typically involve a group of sellers and traders operating across different degrees of informality, usually with lower barriers of entry for small-scale producers and lower-income producers.

The concept of traditional markets is subsumed within the broader and integral concept of territorial markets, which should ideally serve as the foundation of the vision for the development of traditional markets. **The use and promotion of the term "territorial market" reflects efforts to embrace a territorial approach to FSN. However, it is important to note that traditional markets do not only sell locally produced foods, but are also major sellers of imported grains, fruits and vegetables.** Territorial markets have been defined as those directly linked to local, national or regional food systems that meet food demand in both rural and urban areas through short or direct distribution chains (FAO, 2023c). (In this definition, the direct linkage to local, national or regional food systems refers to the vast majority of products, producers, retailers and consumers of the traditional markets being from the given territory.) **Traditional markets offer diverse socioeconomic, nutritional and environmental benefits.** They play a vital role in the territorial economy by allowing for greater retention, redistribution and reinvestment of wealth generated in local communities, and constitute key spaces for the emergence and strengthening of political, social and cultural relations (CSM, 2016; HLPE-FSN, 2020; FAO, 2023c). In terms of food security, they provide greater access to high-quality, nutritious, affordable, seasonal and diverse food options for consumers, especially those with low incomes. These markets still offer more competitive prices, especially in developing countries, particularly for fresh foods (Reardon *et al.,* 2010). In many developing countries, these markets represent the main access point for food categories that are important sources of micronutrients. More than 90 percent of all fruits and vegetables are purchased in traditional markets in Nicaragua, Kenya and Zambia. Even in countries with high supermarket penetration, such as Mexico and Thailand, this figure exceeds 60 percent (Gómez and Ricketts, 2013). Traditional markets also facilitate access to traditional and locally sourced foods that are not commercially distributed in modern supply chains (Rengasamy *et al.,* 2003; Belletti and Marescotti, 2020), in addition to facilitating access to other food groups. Even in large capital cities, the food supply still relies heavily on traditional markets. In Bogotá (Colombia), they represent over half the city's food supply (Guarin, 2013), whereas in Beijing, the Xin Fa Di market is estimated to provide 80 percent of the city's fresh, unprocessed food and beverages (CSM, 2016). In addition, traditional markets sell relatively less processed foods than modern channels. As evidence from Burkina Faso, Malawi and Rwanda demonstrates, although processed foods are present in their offerings, they do not usually represent a significant portion of their sales (Hoogerwerf *et al.,* 2022). Additionally, they enable price negotiation based on product quality (for instance, size, colour and ripeness), as prices are not fixed (as they are in modern supply chains) (Wertheim Heck, Vellema and Spaargaren, 2015; Wegerif, 2020). Another advantage is that they allow for small-quantity purchases and the ability to make credit purchases, which is of great importance for low-income populations with irregular incomes (CSM, 2016). **However, food safety remains a critical challenge to be addressed in these markets, as it is in formal, modern markets** (Henson *et al.,* 2023).

Traditional markets also provide significant economic benefits to small-scale operators. These markets have lower barriers to entry for small operators who, due in part to their informality and exclusion from the financial system, cannot work in modern supply chains (Roesel and Grace, 2015). The flexibility that characterizes these markets allows small-scale producers to obtain fair prices for products that might be considered "second class" in an industrialized system with inflexible standards (Verhaegen and van Huylenbroeck, 2001; Rengasamy *et al.,* 2003; Roesel and Grace, 2015).

Traditional markets also serve multiple social and cultural functions. They are spaces

for information exchange among farmers, encourage the blending of different cultures, and contribute to the development of a sense of local community (Rengasamy *et al.,* 2003; Watson and Studdert, 2006; CSM, 2016). **Lastly, traditional markets can contribute to biodiversity conservation while enhancing resilience to the impacts of climate change.** In terms of biodiversity, traditional markets promote linkages with diverse smallholder farmers, encouraging the marketing of underutilized crops and species (Heindorf, Reyes-Agüero and Van'T Hooft, 2021; Iskander *et al.,* 2021). This, in turn, increases food-system resilience by providing an alternative to global supply chains that may be vulnerable to multiple climate shocks and their effects on prices (CSM, 2016).

Despite their benefits, traditional markets face several governance challenges related to their management and formalization. Internal governance challenges include lack of formal and recognized market-management committees, absence of written constitutions and by-laws and lack of formal registration (Davies *et al.,* 2022). The informality in these markets has been the primary focus of public policy, under a punitive approach, which has yielded very limited results (Alvarez, Grace and Nguyen-Viet, 2021). Attempts by authorities to relocate markets to more suitable environments have often caused vendors to lose consumers and profits, and have led to conflict, sometimes with fatal consequences (Grace, Dipeolu and Alonso, 2019).

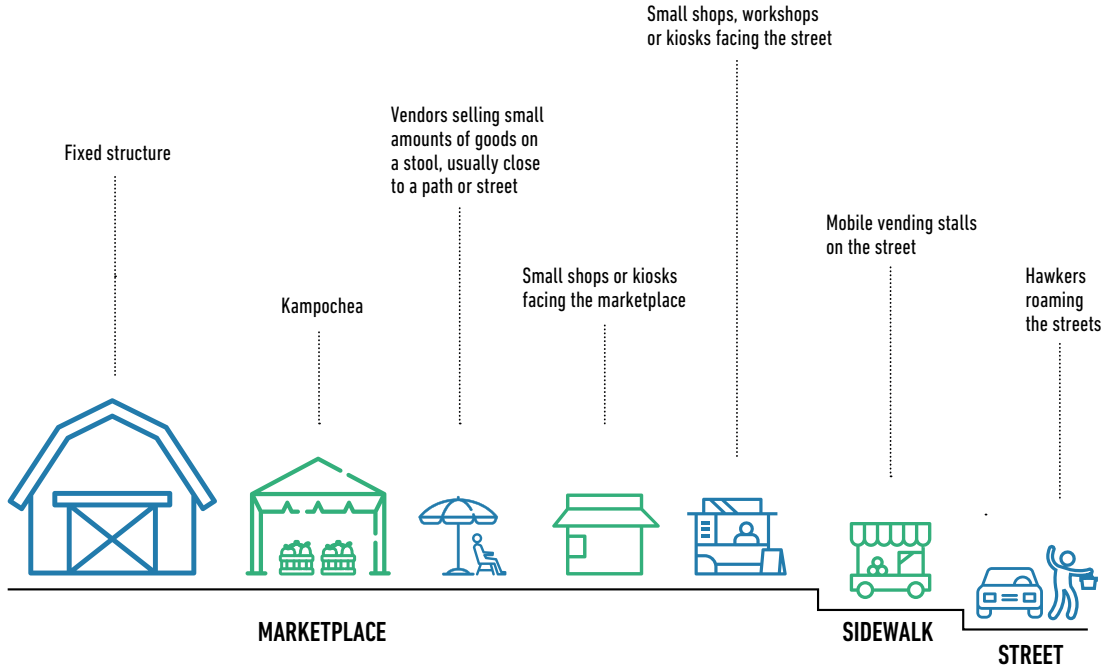
Improving these markets to maximize their contribution to FSN should be a priority in urban policy agendas (HLPE-FSN, 2020). These markets require increased investment and support in infrastructure (including storage capacity and refrigeration), operations (including good food handling practices and waste management) and logistics (including access to quality transportation), as well as access to water and energy, as these factors impact the price and the quality of food (Roesel and Grace, 2015; Balineau *et al.,* 2021; Noegroho *et al.,* 2021; DeWaal *et al.,* 2022). **In HICs and some areas of LMICs, gentrification processes, involving the arrival of tourists, new residents and investments,** exert **pressure on traditional markets**, especially when they are informal, often resulting in their closure or relocation to marginalized areas (Skinner, 2018). In other cases, gentrification can lead to urban policies that promote the transformation of these markets in ways that negatively impact local residents' access to food, such as when these markets shift their focus from providing diverse and affordable foods to becoming a tourist attraction and an economic hub offering "gourmet" products and services for new customers (Gonzalez and Waley, 2012; Boldrini and Malizia, 2014; Espinosa Parra and Bailey Bergamin, 2022; Salazar *et al.,* 2022).

Street food vendors

The street food vending sector is very diverse, including vendors selling fresh produce, meats and other animal proteins, processed foods (locally or internationally produced), as well as prepared food. Vendors may sell from permanent stands, temporary stands, the pavement or they may operate as mobile vendors. **This diversity of retail practices makes the street-food-vending sector difficult to regulate and support.** The street-food-vendor sector is a source of convenience purchases and is often located in areas with high consumer footfall, for example along busy city-centre streets, or adjacent to public transport hubs and public services, such as schools and health clinics. Figure 8 indicates the diversity of market and street vendors in an urban African context.

These food vendors are essential for urban food environments (Sun and Zhu, 2022) due to their spatial convenience and the fact that they provide affordable ready-to-eat cooked food to urban residents in the context of time poverty and infrastructural deficiencies (SEE BOX 6 IN CHAPTER 4). They also sell in small units, making food accessible to poor residents, as well as often selling traditional, culturally appropriate foods. Among the drawbacks, however, are that some vendors sell ultra-processed packaged foods and many of the street foods are high in sugar, salt and fat. In addition, food safety and hygiene standards are not always respected

FIGURE 8
DIFFERENT TYPOLOGIES AND SPATIAL CONFIGURATION IN A MARKET IN DAR ES SALAAM, TANZANIA



Source: Boustedt, S. & Mair, N. 2013. Vendors Galore and more – in search of cultural identity and social values in the Tanzanian marketplace. Gothenburg, Sweden, Chalmers University of Technology. Master's thesis.

by street food vendors (Skinner and Haysom, 2017). With regard to food safety, however, an important shift is underway in the framing of food safety within street food vending, and within the informal sector more broadly: **Increasingly it is being acknowledged that food safety is more linked to infrastructure, environmental conditions, lack of support and training for informal vendors than to the regular or informal status of the vendor** (Ahmed *et al.*, 2014; Wertheim-Heck, Raneri and Oosterveer, 2019; Henson *et al.*, 2023). Moreover, food safety can often be improved through relatively low-cost interventions providing training and technology to informal sector vendors (Grace, 2023).

Local governments have had a long-standing antipathy towards street trading (Kamete, 2013) for a number of reasons. It is seen to compete unfairly for customers with formal businesses and traditional markets (including through non-payment of taxes), to cause traffic congestion, to be unsafe and to harbour criminals (Ng'anjo, 1994). Street vendors are often viewed as being antithetical to the vision of the modern city aspired to by local government (Zhong and Di, 2017).

As a result, responses by local governments to street vending are often punitive, with periodic efforts to remove street vendors or confiscate goods. Other approaches have been to move vendors into existing or new market spaces to continue their trade there. These efforts are often unsuccessful as vendors lose proximity to consumers (Battersby and Muwowo, 2018; Dai, Zhong and Scott, 2019). These actions fail to acknowledge the role of the vendors for urban food security. One approach to improve the safety and governability of street vendors without relocating them is to incorporate them into recognized and protected "natural markets" as "places where sellers and buyers have traditionally congregated", as has been done in India under the Protection of Livelihood and Regulation of Street Vending Act, 2014 (Roever and Skinner 2016).

Street food is a significant source of employment for women in LMIC contexts, where limited

training and access to capital restrict their options. Mothers with small children face challenges in traveling and accessing childcare, making selling food in their communities a crucial income-generating activity, particularly given societal norms associating women with cooking (Skinner, 2016). Evidence from Africa confirms women's dominance in street food vending (Skinner, 2016; Ooto *et al.,* 2011) and suggests they can earn four to sixteen times the minimum legal wage through this endeavour (Ooto *et al.,* 2011). Additional evidence suggests that female street vendors are more likely to sell fresh and traditional cooked foods (Skinner, 2016), as well as more varied and nutritious options (Mwangi *et al.,* 2002). Despite women's significant role, street trader organizations are often led by men, which limits women's agency in decision making processes (Lund and Skinner, 1999; WoW, WEAZ and AZIEA, 2006). Furthermore, street vending may expose women to punitive measures from public authorities and to harassment and violence. For example, a survey in Burkina Faso found that half of all women street vendors had been sexually harassed, and 5 percent reported rape (Ouédraogo, Sisawo and Huang, 2017).

Traditional or informal shops and eateries

Another traditional retail model that is common in LMICs is small, family-owned retail shops or kiosks. India, for example, has about 12 million *kirana* stores selling groceries and other sundries, accounting for 90 percent of the country's total trade (Kundu, 2021). The *duka* is central to the Tanzanian U-PU food system, and the *spaza* is central to South Africa's U-PU food system (Wegerif, 2018, 2020). These small stores often have long opening hours and sell in small units, making them accessible to food-insecure U-PU residents. In many European and LMIC cities (especially in eastern and southern Africa), meat and fish are not sold in traditional markets but, rather, from butcher and fishmonger shops. In Addis Ababa, for example, there are 172 supermarkets (modern retail) and 360 minimarts (convenience stores), but 1 074 butchers (EPHI, 2021).

In addition to ready-to-eat street food and emerging fastfood venues, cities provide many options for eating food outside the home. These include modern outlets (sit-down restaurants, licensed food trucks and vending machines) and formal or traditional eateries (pubs, cooked meat sellers and pavement restaurants). Even in LMICs, eating outside the home is common and increasing (Landais *et al.,* 2023). Higher consumption of food away from home is associated with a worse diet (Lachat *et al.,* 2012; Wellard-Cole, Davies and Allman-Farinelli, 2022) and with greater risk of being overweight or obese (Nago *et al.,* 2014).

3.4.2 MODERN CHANNELS

The surge of modern channels, particularly supermarkets and convenience stores, has revolutionized urban food systems with efficient supply chains. Originating in HICs and rapidly expanding throughout the world, these modern channels enhance convenience and access. However, their emphasis on processed foods contributes to unhealthy dietary patterns, and their expansion undermines food sovereignty by consolidating control over food value chains, marginalizing small-scale farmers, and eroding traditional markets.

The "supermarketization" of food retail in cities

"Supermarketization" is a phenomenon that originated in the HICs in the 1920s, and has expanded rapidly in LMICs since the 1990s (Reardon, Timmer and Berdegué, 2004; Reardon *et al.,* 2010). Supermarket expansion took over 80 years in North America, a few decades in Latin America, and less than 10 to 15 years in Asia and Africa. However, while supermarkets are a major source of food in HICs (with 80 percent share of food sales), their penetration is much less in Asia and Africa, although their rapid expansion is influencing urban food environments.

As a rule, supermarkets enter large cities first and then gradually move into intermediate and

small towns, often using different formats, such as convenience stores and smaller supermarkets, as competition and saturation increase in the initial location. They initially target high-income consumer segments, then cater to the middle class, and finally to low-income urban consumers (Reardon *et al.,* 2010; Kelly *et al.,* 2015; Bahn and Abebe, 2017). Their expansion has been associated with different food categories. As happened decades ago in Canada and the United States of America, they initially focus on processed foods (canned, dry and packaged), then on semi-processed and minimally processed foods (dairy, poultry, pork, beef and fruits), and finally on fresh vegetables and fruits (Reardon *et al.,* 2010).

There are concerns that while supermarkets may provide greater variety, this **tends to increase the availability and affordability of highly processed foods** (Reardon *et al.,* 2009). Although higher access to processed foods can have some immediate benefits (as in ensuring the availability of safe and stable ready-to-eat foods), increased consumption of highly processed foods has negative health implications (Lane *et al.,* 2024). There is evidence that supermarkets that are more accessible to lower-income households offer more limited choices of fresh and healthy foods compared to those accessible to wealthier sectors (Battersby and Peyton, 2014). Therefore, supermarkets may not improve access to nutritious foods and could potentially hasten the transition to unhealthy diets, marked by increased consumption of saturated fats, sugar, and low-fibre refined foods (Battersby and Peyton, 2014). Such poor-quality diets lead to micronutrient deficiencies and heighten the risk of morbidity and mortality (Willett *et al.,* 2019).

Supermarkets are not necessarily safer than territorial markets, particularly in LMIC contexts where there is poor governance, weak infrastructure, and little ability to trace unsafe food or hold suppliers accountable (Roesel and Grace, 2015). Factors such as refrigeration, adequate storage conditions, packaging and expiration date labelling, which one would expect to find in supermarkets, would also be expected to improve food safety, but are not always failsafe. Despite stricter regulatory oversight on supermarkets, some of the foods sold in supermarkets contain harmful chemical additives, which are not always forbidden by law. There have also been instances where foods with expired or near-expiration dates are redirected to less regulated markets, many of which are informal (Roesel and Grace, 2015).

The arrival of supermarkets and shopping malls often undermines local food businesses, both formal and informal (Battersby, 2017). This is sometimes through competitive business practices drawing middle-income consumers to these modern channels, but also through pressure exercised by supermarket companies on local governments to relocate vendors (Battersby and Muwowo, 2018) or to establish restrictive covenants to prevent food businesses operating nearby (Leslie, 2022). The loss of these businesses, which reduces the diversity of options for consumers, therefore undermines food security.

Furthermore, the expansion of international food retailers and the "supermarketization" of food distribution have **consolidated control over different stages of the food value chain** in the hands of an ever smaller number of powerful actors or corporations (Clapp, 2021; Baines and Hager, 2022; Béné, 2022). In this context, the shift towards more concentrated and often longer urban food supply chains has created a market dynamic whereby powerful retailers are able to unilaterally set standards for producers and consumers (Ouma, 2010, 2015), weakening food sovereignty and agency; promoting a culture of mass consumption of industrially produced, highly processed and standard edible commodities; and increasing inequity in livelihoods and in FSN for urban dwellers (De Schutter, 2014a; Skinner and Haysom, 2017).

The **expansion of supermarkets also leads to the exclusion of small-scale food producers and enterprises from urban food supply chains, resulting in social injustice and food insecurity** (Tuomala, 2020; Young and Crush, 2020). Large food retail companies use their price-setting power to influence supplier prices as an integral part of their corporate growth strategy. By obtaining their products at lower prices, they can sell them to consumers at lower prices than their competitors and still maintain high profit

margins. This practice ultimately displaces small and medium-sized retailers from the market, undermining fair competition (Clapp, 2020). In this scenario, the lack of competition can eventually lead to higher prices and a decrease in the quality of products and services for consumers over time. In addition, supermarkets, unlike traditional retail stores, have more demanding transaction and quality requirements, which may represent a barrier to small-scale producers. To reduce costs and ensure a constant supply of safe and high-quality perishable products, supermarkets adopt procurement systems based on specialized wholesalers and demand higher quality and safety standards (Reardon *et al.,* 2004; Hellin *et al.,* 2009). Meeting these requirements requires significant financial, informational and networking resources that small-scale producers often lack, especially in developing countries (Lee *et al.,* 2012). Additionally, the cost of the investments required to meet such standards does not translate into higher prices but falls entirely on the supplier, resulting in excessively high fixed costs for small-scale operations (Reardon *et al.,* 2004). Only their larger counterparts, with economies of scale and greater access to credit, can afford these investments, which further contributes to supplier concentration (Reardon *et al.,* 2004; Lee *et al.,* 2012).

The rapid rise of convenience stores and quick-service restaurants

The rapid proliferation of modern convenience stores is also substantially shaping urban food environments. These small retail businesses, located in strategic urban areas, offer a variety of everyday items, including beverages and groceries (Bianchi, 2009). They typically charge higher prices than other retail outlets, but offer longer operating hours, convenient locations and shorter checkout lines. These stores represent a successful format in developed markets (Bianchi, 2009). While they may be less prominent in developing countries, it is evident that they are expanding rapidly, especially in Latin America (Alcocer-García and Campos-Alanís, 2014) and Southeast Asia.

The significant and growing concentration of ownership of convenience stores, often owned by major food and beverage corporations, raises concerns about market dominance, as they wield substantial control over distribution channels and consumer access, potentially limiting competition and impacting smaller businesses and local economies (Talamas Marcos, 2024). Furthermore, **their food offerings often consist of high-fat, high-sugar foods; fast food and other unhealthy food options.** This is why greater access to these types of businesses is often associated with higher obesity rates (Xin *et al.,* 2021).

Similarly, **the expansion of quick-service restaurants (fast food vendors) throughout the world is further increasing access to unhealthy processed foods.** It has been demonstrated that the presence of these types of food service is correlated with higher levels of obesity and cardiometabolic diseases (Otterbach *et al.,* 2021). While there have been efforts in many HICs and some LMICs to establish restrictive zoning to limit access to foods high in sugar, salt and fat on the part of vulnerable populations, the effectiveness of such policies as stand-alone interventions has been questioned (Soon, Gilliland and Minaker, 2023).

The characteristics of the food retail and service sector and the shifts in the kinds of food being made available must be understood in the context of changes further up the supply chain. Increasingly, **food companies are targeting multiple types of retailers to increase sales to lower-income consumers in LMICs.** Nordhagen and Demmler (2023) identify 13 different business-model features used by companies to increase their distribution of both highly nutritious and less nutritious foods. The evidence base on the impact of this on diets is as yet limited, but this is an important trend to track for impacts of U-PU food systems and diet.

3.4.3 THE RISE OF ONLINE FOOD RETAIL

In addition to the growth of supermarkets and convenience stores, **cities throughout the world are witnessing a rapid rise in online**

food ordering and delivery services, which are reshaping how many urban dwellers access food (Wang, Somogyi and Charlebois, 2020; Pingali and Abraham, 2022). In many regions, there has been a noticeable surge in online grocery sales in recent years, particularly since the COVID-19 pandemic, with an increasing number of consumers relying on digital platforms for food purchases (Amir and Rizvi, 2017; Dannenberg *et al.,* 2020; Abu Hatab *et al.,* 2023). This trend encompasses various e-commerce modes, including business-to-consumer food shopping, online -to -offline delivery, and in-store meal services (Wang and Somogyi, 2018; Wang and Coe, 2021). The rapid digitalization of urban food systems, propelled by digital tools such as mobile phones, media applications and social networks, characterizes a new phase of urban food-system transformation (Pingali and Abraham, 2022; Mantravadi and Srai, 2023).

Although online and digital retailers have undoubtedly revolutionized the way consumers shop for food, they are not without criticism (Reimold *et al.,* 2024). One key critique revolves around the issue of food waste (Yenerall and Chen, 2023), as online deliveries increase the use of single-use plastics and non-recyclable materials for packaging (Morrow, 2019a; Maimaiti *et al.,* 2020). Moreover, online shopping may not be accessible to all demographics, particularly those in rural or low-income areas (Chiong *et al.,* 2024). There have also been ethical concerns regarding labour practices and workers' rights, due to observed poor working conditions, low wages and lack of job security among delivery drivers and warehouse workers (Parwez, 2022, Schneider and Eli, 2023). Together with supermarketization, the rise of online food retailers contributes to weakening local businesses and traditional food markets (Porter, Staver and Rogers, 2016; Branstad and Solem, 2020).

3.4.4 NON-MARKET MECHANISMS TO ADDRESS FOOD INSECURITY

Non-market mechanisms encompass a variety of strategies and initiatives that involve community engagement, social networks and public interventions aimed at improving access to nutritious food and reducing food insecurity among urban residents (Diekmann, Gray and Thai, 2020; Kaur *et al.,* 2022). They **play a crucial role in ensuring food security in urban areas, complementing traditional market-based approaches** (Reid, 2016; de la Haye, 2022), and are therefore an important part of U-PU food systems. Non-market ways of ensuring access to food are fundamental in periods of crisis and emergencies, but they also play a role in strengthening social cohesion in urban communities.

Community and social networks

Community-based food organizations have emerged in recent decades and contribute to food security, food justice and food-waste reduction in cities worldwide (Warshawsky, 2018). These include formal non-governmental organizations, informal community-based organizations, and dynamic social networks and movements. As key civil-society entities, community-based food organizations have historically operated feeding schemes and soup kitchens (Caraher and Cavicchi, 2014). However, despite their increasing prevalence, there are concerns regarding their effectiveness in achieving social service objectives or catalysing societal transformation (Gómez Garrido, Carbonero Gamundi and Viladrich, 2019).

Food remittances and food sharing

Rural-to-urban and cross-border food remittances play an important role in urban food security, but also in maintaining access to culturally appropriate foods and maintaining social connections to family networks (Crush and Caesar, 2018; Nyamnjoh, 2018). This practice is often episodic, rather than continuous. Food sharing within U-PU areas is a common practice across the world (Davies, 2019), which may operate very informally (for instance, sending a child to a neighbour to eat with them when food is scarce), or more formally (for instance using ICT platforms [Davies *et al.,* 2017] or solidarity fridges) (Berns, Rissitto and Tholander, 2023). In low-income urban areas, the social relationships that allow this sharing are carefully managed, so as not to stretch the relationships to breaking

point (Duncan, 2013). As such, there are limits to this form of social access to food.

Community kitchens

Community kitchens provide a vital resource for individuals and households facing food insecurity by offering access to nutritious meals for those who may struggle to afford or access adequate food options on a regular basis (Ibrahim, Honein-AbouHaidar and Jomaa, 2019; Regnier-Davies *et al.,* 2022; Lundström, 2023). They also serve as spaces where people come together to share meals, fostering a sense of belonging and community cohesion (Agarwal, 2022) and providing opportunities for social interaction (Karnosoehardjo, 2023). Several studies show that many community kitchens prioritize sourcing ingredients locally, which supports urban farmers and producers (Mendes and Sonnino, 2018; Marovelli, 2019; Véron, 2023). In countries like Brazil and Mexico, government-run community dining rooms have successfully emerged to offer nutritious meals made from locally sourced ingredients at subsidized prices (Tenuta *et al.,* 2021). They empower urban communities to make healthier food choices, develop cooking skills, and learn about food preparation techniques, ultimately promoting better health outcomes (Cvoric *et al.,* 2018; Reicks, Kocher and Reeder, 2018; Abbey, LaVoie and Pointer, 2021). Furthermore, community kitchens have proven to be an important instrument during shocks. For instance, during the COVID-19 pandemic they contributed effectively to community resilience (Blay-Palmer *et al.,* 2021; Regnier-Davies *et al.,* 2022; Rut and Davies, 2024). The Brazilian federal government has provided technical and financial support for community kitchens since 2023, connecting community and state actors (Government of Brazil, 2023 and 2024).

Although community kitchens offer huge potential to address urban food security, they are not without criticism (Meah and Jackson, 2013; Buttorff *et al.,* 2015; Gennari and Tornaghi, 2020). Community kitchens may not reach all individuals experiencing food insecurity, particularly those who face barriers such as lack of transportation, stigma, or lack of awareness of their existence (Hwa Lee *et al.,* 2010; Aimol, 2022). As community kitchens rely on volunteers and donations, they are vulnerable to fluctuations in the support they receive and often struggle with funding (Nelson *et al.,* 2011; Hennchen and Pregernig, 2020). Furthermore, there are concerns about hygiene, sanitation and the nutritional adequacy of meals prepared in community kitchens, especially those with limited resources or expertise (Hounkpe *et al.,* 2023).

Food banks

Since their origins in the United States during the 1960s, food banks have expanded their reach to over 30 countries, providing subsidized or free meals and unused food to the urban poor (Warshawsky, 2023). Managed primarily by diverse civil-society and faith-based organizations, food banks employ various models to collect surplus food from grocery stores, farms and manufacturers and redistribute it within local communities (Tefft *et al.,* 2017; Levin, Idler and VanderWeele, 2022). Despite their efforts to improve the efficiency of food-redistribution systems, questions linger regarding their long-term impact on reducing food insecurity or waste (Loopstra *et al.,* 2019), especially because of challenges such as funding shortages, state or private-sector interference, and inappropriate placement, particularly in LMIC contexts. By focusing solely on the quantity of food redistributed rather than addressing the root causes of food insecurity or waste, they may depoliticize issues of food security and social inequality (Riches and Silvasti, 2014), inadvertently perpetuate the underlying issues, and sometimes create a false sense of the problem being resolved, without addressing its complexities (Rivera, Smith and Ruiz, 2023).

Food procurement programmes

Public interventions, such as food assistance programmes and policies, include subsidized food and nutritional assistance for low-income

families and policies aimed at improving access to healthy foods in underserved communities (Ilieva, Fraser and Cohen, 2023). Effective targeting of such programmes to support the most vulnerable should be a priority. Food procurement programmes are increasingly adopted and can have impacts on the food that is purchased (preferably, local, diverse, healthy, sustainable, etc.), from whom it is purchased (preferably, smallholder farmers and artisanal fisherfolk, small and medium enterprises, vulnerable groups, etc.), and the type of food production (ideally, sustainable agriculture, fishing and aquaculture) (Tartanac *et al.,* 2019).

School feeding programmes are considered a fundamental intervention to achieve the multiple objectives related to nutrition, sustainability, social inclusion and livelihoods. They have demonstrated effectiveness in yielding positive educational and health outcomes for children, especially children from disadvantaged backgrounds (Cabannes & Marocchino, 2018; Stevano, Johnston and Codjoe, 2020; Hunter, Loboguerrero and Martinez-Barón, 2022). Moreover, school feeding programmes, often administered by local urban authorities, stimulate job creation across the supply chain (Okolo-Obasi and Uduji, 2022; Veloso and Schwartzman, 2022).

Municipal governments can also act as direct food providers in other public settings, including government offices, hospitals, care homes and prisons (Morley and Morgan, 2021; Xin, Yang and Shi, 2022; Al Jawaldeh and Meyer, 2023), promoting the production of healthier food crops through sustainable agricultural practices, encouraging healthier food-processing options, reducing food loss and waste, and raising awareness about nutrition (FAO, 2017). For instance, local governments in Uruguay and Zambia have implemented ambitious food-procurement policies that provide employment opportunities and foster sustainable food systems (Albert *et al.,* 2017).

Despite the potential of broader economic and social benefits, many public food procurement programmes are often primarily concerned with ensuring the cost-efficiency and timeliness of food supply. Hence, they may favour conventional industrial farming and value chains controlled by large-scale agrifood industries (Kelly and Swensson, 2017; Gaitán-Cremaschi *et al.,* 2019, 2022). In general, the design and implementation of public procurement programmes vary widely across cities and regions, with several factors influencing their effectiveness and sustainability, including the types of food purchased, where they source the food and the production systems utilized (Swensson and Tartanac, 2020). Despite their recognized benefits, school feeding programmes are challenged by limited education budgets (Roothaert *et al.,* 2021; Chaves *et al.,* 2023); logistical and organizational hurdles (health quality checks); the need for efficient procurement, storage and distribution channels; and the need for the necessary financial management and auditing skills (Colón-Ramos *et al.,* 2022).

3.5 FOOD LOSS AND WASTE

As urbanization increases, more food is being produced and more food is being wasted, and cities are at the epicentre of food waste generation and management (Parsa *et al.,* 2023). Cities are significant contributors to post-consumption food waste, with organic waste comprising more than half the total urban-waste stream. Increased income, dietary transition and modern retail distribution systems have increased food waste in urbanizing regions (Lee, 2018; Schanes *et al.,* 2018; Morone *et al.,* 2019; Spang *et al.,* 2019; Mak *et al.,* 2020). Consumer behaviour also plays a crucial role, with urban dwellers often buying more than they can consume, discarding leftovers, or prematurely disposing of food due to confusing date labels (Kavanaugh and Quinlan, 2020). Inadequate food storage and handling practices on the part of both consumers and retailers also leads to spoilage and waste. Within traditional-market and street-vendor sectors, this waste is the outcome of inadequate provision of storage and shade. Simple interventions, such as ensuring access to natural shade or umbrellas for vendors, can reduce spoilage and waste (Mahadevia *et al.,* 2014; Basu and Nagendra, 2020). Additionally, aesthetic standards for produce, including the rejection of edible but

cosmetically imperfect items, further exacerbate the food-waste problem. Portion sizes in restaurants and homes can be excessive, resulting in uneaten and, thus, wasted food; while logistical inefficiencies in the food supply chain and the lack of infrastructure for food donation also contribute to the problem (Warshawsky, 2015, 2019, 2020).

Efforts to address this issue in developing countries revolve primarily around food loss within the midstream stages of the food chain, while in developed countries these efforts centre more on food waste at the consumption stage. In developing countries, deficiencies in storage facilities, transportation infrastructure and logistics, as well as outdated wholesale markets are some of the main drivers of high levels of food loss (Ishangulyyev *et al.,* 2019). Many of these challenges exist outside U-PU areas, which makes coordinated governance and solutions between local, subnational and national governments difficult to achieve.

In fact, in LMICs, the lack of strong urban food loss and waste policies and inadequate local waste-management systems contribute to a governance vacuum. The concept of circular economy (Box 5), along with more concrete ways to implement it in LMIC contexts, can prove useful to address U-PU food system sustainability and food-waste challenges.

BOX 5

CIRCULAR ECONOMY: OPPORTUNITIES AND CHALLENGES

Circular economy is an economic system based on the reuse and regeneration of materials or products, especially as a means of continuing production in a sustainable manner. Circular economy is being promoted as a pathway to sustainable development for urban food systems (Zeller *et al.,* 2019; Kębłowski, Lambert and Bassens, 2020; Stuiver and O'Hara, 2021). Some ways in which it can do this are: ensuring that by-products are used to their highest value, applying regenerative approaches to food production in peri-urban areas, and creating revenue streams and jobs within circular economy processes in food systems. However, the practical implications of such a shift have not been clearly defined. Much of the work that has been done has been targeted at developed countries with industrialized and consolidated food systems (Muchangos, 2022). As such, this work does not address the opportunity to build the capacity of cities in LMICs to better cope with and manage the impacts of rapid urbanization on their food systems. As more LMIC-specific research is conducted, it will be important to take into consideration the specific drivers of food-system transformation in these cities, including population size, wealth, consumption preferences, technological developments, markets, environmental factors and politics. Such research should also recognize local, traditional practices that are already in place and that are circular in nature, as well as, importantly, the risks and challenges associated with increasing circularity, such as the health risks of re-using food waste, rebound effects, lack of infrastructure and possible mismatches between local and national policy goals.

3.6 CONCLUSION

This chapter has provided an overview of key activities of U-PU food systems and identified their contribution to FSN. U-PU food systems include elements, activities and actors operating within and beyond U-PU areas. As such, governing them is complex. Strengthened local and territorial food systems can improve food-system sustainability and equity and provide regional livelihood and economic development opportunities. However, it is important to note that U-PU residents in many developing countries remain dependent on food from distant sources (sold in both modern and traditional market channels).

Traditional and informal sector activities remain vital components of food systems serving residents of U-PU areas and are important sources of livelihoods and employment. However, their viability is often hampered by existing governance structures and policies. The creation of an enabling policy environment for these sectors is an important opportunity to strengthen U-PU food systems.

Diversity in U-PU food systems, from production to consumption, increases resilience to external shocks (including climate, economic and political shocks) and enables consumers to access food in changing circumstances. Maintaining food-system diversity benefits both food-system resilience and food security. Maintaining and enhancing diversity should, therefore, be a central pillar in efforts to strengthen U-PU food systems for improved FSN.

CHAPTER 4

FOOD ENVIRONMENTS AND URBAN FACTORS SHAPING CONSUMPTION IN URBAN AND PERI-URBAN AREAS

Urban and peri-urban agriculture in Caracas, Venezuela, 2003. The demands and initiatives of urban residents are a powerful entry point for transforming food systems. Urban residents can be important partners in the development and implementation of urban food policies and in community-based approaches, such as urban gardens and surplus food redistribution.

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KEY MESSAGES

- Globally, most of the food consumed is purchased in U-PU areas, rather than grown or shared. However, U-PU diets and food-sourcing strategies vary significantly by income and other individual and household characteristics.
- Healthy foods are typically more expensive and time consuming to prepare than foods high in sugar, salt and fat, and affordability is a key driver of consumption choices among the food insecure.
- U-PU food consumption and affordability are shaped by factors of the external, family and personal food environments.
- Many factors shaping food choice within U-PU food environments extend beyond food-system issues and therefore require a broader suite of interventions, including addressing time poverty, energy poverty and infrastructure deficiencies, as well as employment and livelihood stability.

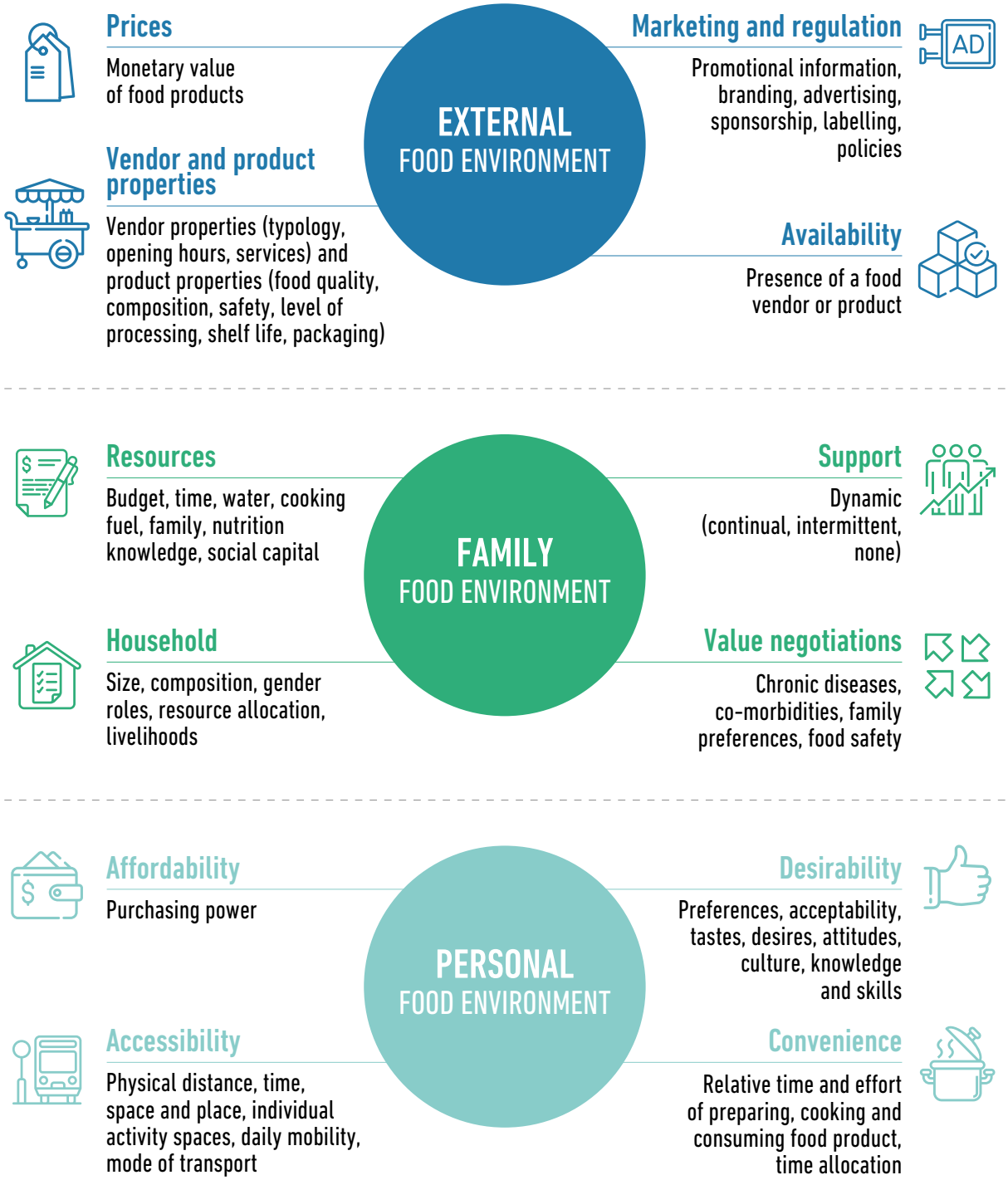
4.1 INTRODUCTION

Urban consumer demand is a powerful and pivotal entry point for transforming food systems. Mechanisms for leveraging consumer demand may differ across contexts, including LMICs, where U-PU food insecurity is high, and HICs, where urban food insecurity is lower (<15 percent in upper-middle income countries and <8 percent in HICs).

This chapter demonstrates that food demand is shaped by food environments. **Food environments can be understood as "the physical, economic, political and socio-cultural context in which consumers engage with the food system to make their decisions about acquiring, preparing and consuming food"** (that is, food choice) (HLPE-FSN, 2017; Constantinides *et al.,* 2021). Importantly, food choice is shaped by upstream factors, such as national agricultural policies, global trade policies, climate and cultural preference, and is also shaped by downstream factors, such as desirability, cultural preferences and class. Efforts to shape food demand towards healthier, more sustainable diets and towards more equitable food systems must therefore adequately consider the complex upstream and downstream factors that affect food choice. Notably, some of these factors extend beyond administrative borders.

This chapter considers U-PU food consumption patterns through the lens of interactions across food environments (Turner *et al.,* 2018). It first addresses three main subdomains (the external food environment, the family food environment and the personal food environment), which shape food choice (FIGURE 9). The family food environment refers to how the broader scales of urban conditions, (that is, the external food environment), are at play at the household level and affect individual food choice and consumption patterns. These U-PU conditions include fuel and energy uses, transport systems and housing security. The connections between poor U-PU conditions and individual food choices demonstrate the need for transformative actions that are informed by both the right to food and the right to the city, and their interactions. Urban and peri-urban food environments, which shape food choice, are in turn shaped by external drivers, including national trade, food and economic policy, and these drivers also interact at multiple scales (Constantinides *et al.,* 2021). The chapter then describes a case study from Sri Lanka to illustrate how urban conditions and the external food environment interact to shape household food choices and consumption patterns, and how these interactions differ across income strata.

FIGURE 9
EXTERNAL, FAMILY AND PERSONAL FOOD ENVIRONMENTS



Source: Ambikapathi, R., Boncyk, M., Gunaratna, N., Fawzi, W., Leyna, G., Kadiyala, S. & Patil, C.L. Forthcoming. Expanding the Food Environment Framework to include family dynamics: A synthesis of qualitative evidence using HIV as a case study. *Global Food Security.*

4.2 EXTERNAL FOOD ENVIRONMENT AND THE URBAN AND PERI-URBAN CONTEXT

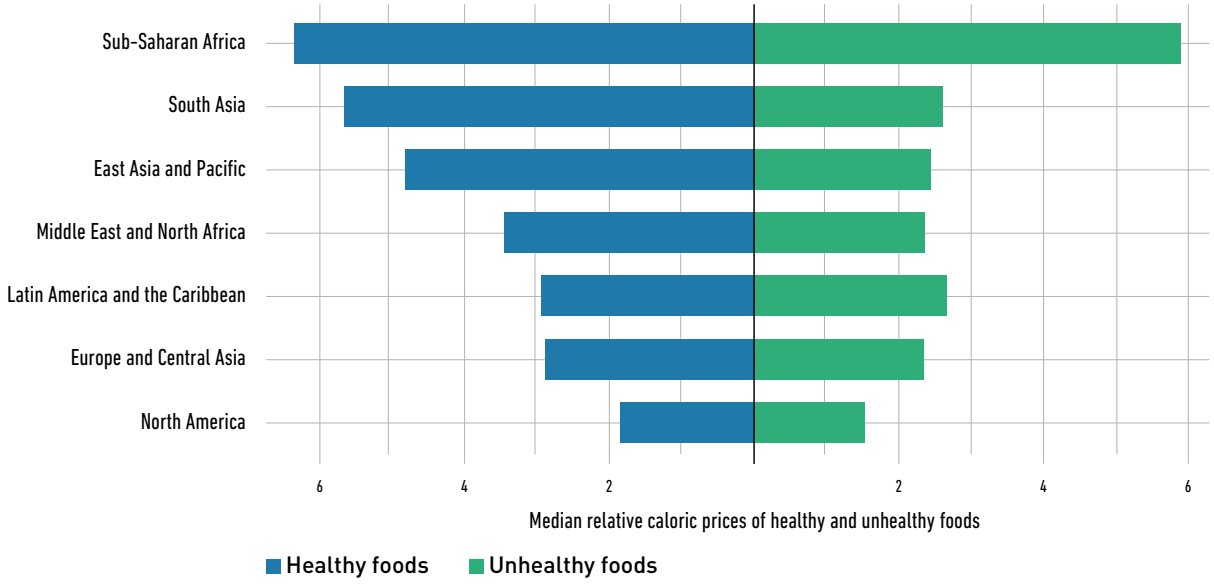
Elements of external U-PU food environments include food prices, food availability, food marketing and regulation, and food vendor properties and products. These elements are described in this section.

4.2.1 FOOD PRICES

In urban areas, healthy foods are typically more expensive than foods high in sugar, salt and fat (reflecting national patterns.) In all regions (except sub-Saharan Africa) and across income levels, the relative cost of foods high in sugar, salt and fat per calorie is lower than that of healthy foods (Headey and Alderman, 2019), as demonstrated in Figure 10.

FIGURE 10

MEDIAN RELATIVE CALORIC PRICES OF HEALTHY AND UNHEALTHY FOODS, BY REGION



Source: Ambikapathi, R., Baye, K., Cavatassi, R., Schnieder, K., Davis, B. & Neufeld, L. Under review. Pathways and Policies to Improve Nutrition under Resilient and Inclusive Transformation. *Global Food Security.* Data from: Headey, D.D. & Alderman, H.H. 2019. The Relative Caloric Prices of Healthy and Unhealthy Foods Differ Systematically across Income Levels and Continents. *The Journal of Nutrition,* 149(11): 2020–2033. https://doi.org/10.1093/jn/nxz158

Food affordability is a key driver of food choice (or lack of choice), especially among urban low-income consumers (Constantinides *et al.,* 2021; Vilar-Compte *et al.,* 2021; Karanja *et al.,* 2022; PMBEJD, 2024). Long-term global trends indicate that fruit and vegetable prices have risen substantially over time, while the relative prices of ultra-processed foods have fallen (Wiggins and Keats, 2015). Recent landmark work on the cost and affordability of a recommended healthy diet has highlighted that over 3 billion people globally cannot afford the recommended healthy diet because the median cost of a healthy diet (USD 3.75 per day) is much higher than their income (Herforth *et al.,* 2020; Bai *et al.,* 2021). Most of these people live in Southern Asia (1.3 billion) and sub-Saharan Africa (829 million). Not surprisingly, these are also places with a substantially higher burden of food insecurity.

Despite the importance of food affordability in people's access to healthy diets, food choice is complex, and household financial resources can limit healthy food affordability (Penne and Goedemé, 2021). **Notably, the impact of food price as a driver of diet quality decreases as income increases.** In the United States, for example, over 95 percent of people can afford a healthy diet, yet less than 10% US adult population (Committee to Review the Process to Update the Dietary Guidelines for Americans *et al.,* 2017) meet the recommended levels of intake for dairy, fruits and whole grains; US has overall relatively poor diet quality (a diet-quality score of 52 out of 100); and obesity rates of over 40 percent, with significant subpopulation diet-quality disparities (Tao, Liu and Nguyen, 2022; Shams-White *et al.,* 2023). A similar pattern is evident in African countries where the consumption of highly processed foods increases with income (Smart, Tschirley and Smart, 2020). **The relative affordability of healthy vs foods high in sugar, salt and fat is a key factor driving the current diet quality patterns in low-income areas; however, many other factors in food environments shape these consumption patterns.**

4.2.2 FOOD AVAILABILITY

Food availability refers to the presence of a food vendor or products sold by those vendors, or the **spatial and temporal accessibility of foods.** Much research has explored associations between **people's geographic access to retail food sources and diet-related outcomes,** including non-communicable disease (Caspi *et al.,* 2012; Minaker *et al.,* 2016; Stevenson *et al.,* 2019; de Albuquerque *et al.,* 2022). Although historically most of this research has had a HIC focus, more recent research has increasingly focused on LMICs (Pérez-Ferrer *et al.,* 2019; Turner *et al.,* 2020; Laar *et al.,* 2022; Boxer *et al.,* 2023; Mendes *et al.,* 2023; Stadlmayr *et al.,* 2023). This recent research focuses on the notion of the "food desert" – commonly defined as low-income neighbourhoods and communities that have limited access to affordable, nutritious foods (see Ploeg *et al.,* 2009). Another popular metaphor used to frame problems in the retail food environment is the "food swamp", low-income areas with a high density of establishments selling predominantly foods high in sugar, salt and fat (Cooksey-Stowers *et al.,* 2020).

However, despite the research and policy popularity of food deserts and food swamps, **research exploring how physical geographic access to food is associated with diet-related outcomes finds mixed and inconsistent results.** While some studies find associations in expected directions (that is, higher geographic exposure to nutritious food is associated with healthier diets or lower prevalence of nutrition-related chronic disease), many studies find null results, and a few studies find associations in the opposite direction (Stevenson *et al.,* 2019; Turner *et al.,* 2020; Turner *et al.,* 2021; Boxer *et al.,* 2023; Stadlmayr *et al.,* 2023). This is partly due to the significant methodological heterogeneity between studies (Stevenson *et al.,* 2019; Turner *et al.,* 2020; Turner *et al.,* 2021; de Albuquerque *et al.,* 2022; Laar *et al.,* 2022), which makes it impossible to generate firm conclusions on the role of physical geographic access to food and diet-related outcomes. Even if they do show positive effects, sustainability of these interventions over a period of time is not well known.

A large body of literature has explored the implementation and impacts of food-retail interventions aiming to improve consumer nutrition environments (that is, the availability, marketing, merchandising and affordability of nutritious foods) within grocery stores and convenience stores (Gittelsohn, Rowan and Gadhoke, 2012; Gupta *et al.,* 2022). The results of these studies are mixed, with recent reviews acknowledging the importance of intervention co-creation, together with stakeholders, as key to sustaining such interventions (Vargas et al, 2022). A limitation of existing evaluation research is that very little comes from LMICs.

Inconsistent findings may also be explained by HIC vs. LMIC context or by different types of impacts on different household members. This was the case with the impact of the arrival of supermarkets in Kenya, for instance, which increased the rates of adult overweight (Demmler, Ecker and Qaim, 2018) while resulting in positive

nutrition outcomes for children (Debela *et al.,* 2020).

Another potential limitation of the research to date is its predominant focus on formal food retailers, such as supermarkets (see, for example, the Food Access Research Atlas (USDA, 2022). Supermarkets are far from the only source of affordable, nutritious foods in many U-PU areas, and the conflation of food access with the presence of supermarkets potentially undermines FSN for vulnerable populations, as their presence also increases access to highly processed foods, high in sugar, salt and fats and crowds out informal food retailing channels, which often provide local fresh produce (Battersby, 2019b). **In urban LMICs, there is a mixture of modern, traditional and informal (often mobile) food environments that consumers choose from, based on different locations and income levels.** Moreover, food-sourcing strategies vary by income level, with lower-income residents typically sourcing food from informal and traditional retailers and higher-income residents being more dependent on modern market sources (Battersby, 2019a; Wertheim-Heck, Raneri and Oosterveer, 2019). The presence of informal food retailers creates temporal and spatial variability in food availability and accessibility, as some vendors operate only on particular days or periods of the month, depending on perceived demand. This variability poses a challenge to accurately assessing the connection between the physical food environment and dietary patterns and health outcomes (Ambikapathi *et al.,* 2020).

Food availability in institutional food environments (such as workplaces and schools) is increasingly recognized as a key entry point to shape and sustain healthy food choice, by providing physical proximity and convenience. Workplace interventions yield multiple benefits across individual, household and business spheres. Benefits for individuals include improved nutrition knowledge, healthier eating habits, longer breastfeeding duration, weight reduction, enhanced job satisfaction and overall better diet quality. At the household level, such interventions reduce labour for food preparation. For businesses, they enhance worker productivity, reduce medical costs, increase earnings and provide livelihood opportunities for small and medium-sized catering enterprises (GAIN, 2019). Workplace FSN interventions and the research monitoring their impacts have been for a longer time in HICs than in LMICs. As a result, there is more evidence on their effectiveness in HIC contexts than in LMIC contexts (Allan *et al.,* 2017; GAIN, 2019). As to school feeding programs, the benefits include improving school attendance and improved long term human development outcomes (Jomaa, McDonnell and Probart, 2011; Aurino *et al.,* 2023). Having subsidized or free meals in schools improves the food and nutrition security of the students and their households (due to fewer mouths to feed). School feeding programmes also serve as a stable source of demand that can provide reliable income to rural farmers. Finally, such programmes can also promote the production of nutritious foods (Fox and Timmer, 2020).

However, school food environments also entail challenges. Peer pressure for children and adolescents to purchase and consume foods high in sugar, salt and fat is often present, and these foods are marketed much more and tend to be more affordable than healthy foods. Another factor that is increasingly recognized is that food choice is an important medium through which this age group expresses agency as they transition into adulthood (Downs and Demmler, 2020). Co-designing and integrating children's and adolescents' voices in intervention programmes is key to sustaining healthy eating behaviours (Neufeld *et al.,* 2022).

4.2.3 FOOD MARKETING AND REGULATION

There is pervasive marketing and advertising of foods high in sugar, salt and fat across both high income and low-income contexts. Food marketing frequently targets people by social identity (including age, class, gender and race), by aspirations (especially for children, for instance, using sports sponsorships or cultural references) (Bragg *et al.,* 2018; Kelly *et al.,* 2019). A high prevalence of junk food and soda marketing aimed at children and located near schools has been

found in variety of contexts (Chacon *et al.*, 2015; Kelly *et al.*, 2008; Akl *et al.*, 2024). Further, retailers and food companies run widely advertised discounts and promotions in supermarkets. These discounts play an important role in the food strategies of low-income urban households, but often promote highly processed foods (Jones *et al.*, 2019; Pettigrew *et al.*, 2022; Shrestha *et al.*, 2023).[2]

Just as food marketing focuses on particular market segments, companies are increasingly seeking to shape demand for products by targeting multiple types of retailers using different packaging sizes or quality for the same product, or by creating lower-quality versions of a product to be sold at lower prices (Nordhagen *et al.*, 2023). This creates greater opportunities for consumers to access processed foods.

Zoning regulations have been advocated by many public health organizations to improve external food environments in cities. Land-use policies can impact residents' geographic access to food, and thus, zoning bylaws have been proposed as a means to improve access to healthy foods (for example, specifying land-use definitions in zoning codes to include "healthy food retail") or to reduce access to foods high in sugar, salt and fat (for instance, by disallowing specific land uses such as "fast food outlets").

Scant research has been conducted to evaluate the impact of such policies. A 2009 study on North America's first fast food restaurant zoning restriction found that the policy failed to change the population's access to fast food restaurants and, unsurprisingly, had no impact on the health outcomes of the population, such as obesity and body mass index (Sturm and Cohen, 2009). A more recent simulation study found that, over 10 years, a zoning restriction to limit school-children's access to fast food and convenience stores around schools would have minimal impact on access to these outlets in existing neighbourhoods, and that equity concerns (that is, the fact that schools with a higher proportion of equity-deserving students had higher access to unhealthy food sources) would not be ameliorated (Soon, Gilliland and Minaker, 2023). Therefore, despite widespread advocacy of zoning regulations to improve the food environment, evidence does not yet support the effectiveness of such approaches, and more research on implementation, impact and complementary measures is needed.

4.2.4 VENDOR AND PRODUCT PROPERTIES

As noted in Chapter 3, different food retail environment sectors in U-PU areas meet different needs of consumers. Diverse retail options provide consumers with different pathways to meet their food needs under changing circumstances. **Informal and traditional retailers, in particular, meet the needs of lower-income consumers by selling in small units, offering credit and often operating long hours to meet the needs of urban commuters** (Nordhagen *et al.*, 2023).

However, U-PU food retailers in low-income areas of LMICs are impacted by infrastructural deficiencies. Poor transport infrastructure, poor access to clean water and sanitation, and unreliable or expensive energy supplies, coupled with limited financial capital, fundamentally impact the stocking and storage practices of these businesses. Retailers mitigate this impact by purchasing more frequently from wholesalers (at greater cost), or by stocking fewer perishable food items. This reduces the accessibility of fresh foods and increases the accessibility of more processed foods (Fuseini, Battersby and Jain, 2018). Higher urban temperatures also affect food safety, especially when there is inadequate refrigeration or cold-chain infrastructure. The burden of foodborne diseases in LMICs is projected to rise dramatically with the impacts of climate change and urbanization (Blekking *et al.*, 2022).

In LMIC contexts, there is often a trade-off between food safety and availability. Informal, traditional markets are the primary source of the most nutritious, but high-risk, fresh foods, such as eggs, green leafy vegetables and fish (Grace,

[2] Notably, billboards, which are often used to promote highly processed foods and other foods high in sugar, salt and fat, are often an area of local government mandate. This provides an opportunity for local governments to positively influence food environments.

2015a). Measures intended to improve food safety can have the unintended consequence of reducing its availability. For example, in Kenya, the cost of pasteurized milk is double that of raw milk and, therefore, it is beyond the means of many poor families (Blackmore *et al.,* 2022). In the absence of formal food-safety regulations, food vendor qualities such as cleanliness, appearance, social interaction and trust become important markers of food safety perception that drive food choice, especially for nutritious foods such as animal-source foods and green leafy vegetables. Most of the interventions on food safety for consumers tend to be limited on knowledge and practices, but current evidence from both HIC and LMIC settings suggests interventions that go beyond awareness raising are necessary (Isanovic *et al.,* 2022). Interventions could also address improved access to water and sanitation, market infrastructure, and vendor-group training and certification (Nordhagen, 2022). **Improving market infrastructure and access to water and sanitation, will become an important to climate adaptation, as temperatures and humidity rise, leading to increased spoilage and growth of food-based pathogens** (Bezner Kerr *et al.,* 2023).

Different vendor types have operating strategies designed to meet the needs and preferences of different market segments at different times. The relative presence or absence of these different types of vendors is shaped by perceived demand. As such, the external food environment should not be understood only as the context in which consumers engage with the food system, but also as being shaped by consumer actions. The Healthy Corner Stores programmes, in Baltimore, are of particular interest in this regard. They operate predominantly in low-income neighbourhoods, aiming to change multiple aspects of the external food environment (such as price, affordability and availability) while working with community groups to raise nutrition awareness and, thus, shape consumer demand (Paluta *et al.,* 2019; Slapø *et al.,* 2021). The programmes have shown promising impacts on healthy diet-related purchasing, knowledge and self-efficacy, especially when they include components to improve price, availability, and demand (Langellier *et al.,* 2013; Chrisinger *et al.,* 2018; Slapø *et al.,* 2021). The key to interventions relies on design elements, such as citizen science, participatory approaches and building community trust and buy-in.

4.3 FAMILY FOOD ENVIRONMENTS IN URBAN AND PERI-URBAN CONTEXTS

Family food environments bridge external and personal food environments (Slater *et al.,* 2012; Ambikapathi, 2021; Neve *et al.,* 2024). In Viet Nam, for example, intergenerational factors, such as children wanting marketed fast foods and sodas affect family meal choices (Wertheim-Heck and Raneri, 2019). Other factors, such as value negotiations, nutrition knowledge, health conditions and other family expenditures (including health care and housing), also play a role in shaping food choices (Ambikapathi, 2021; Boncyk *et al.,* 2022). An approach that is increasingly recognized as a holistic method for enhancing healthy dietary behaviours is the family systems approach. This approach acknowledges the daily interactions, behaviours and interconnected practices (as well as resources) of family members and how these shape diets, health and overall well-being (Aubel, Martin and Cunningham, 2021).

4.3.1 RESOURCES

Resources related to family food environments include: budget, time, water, cooking fuel and family nutrition knowledge. (Budget is addressed under household characteristics in SECTION 4.3.2.) As discussed in the context of retailers in low-income settings, infrastructure fundamentally shapes food choice. **Housing and neighbourhoods are crucial infrastructures that shape the food environment, influence food choices and, consequently, impact food security and health outcomes.** In U-PU areas in both HICs and LMICs, housing adequacy and security are a major concern for many families. Currently, an estimated 1.6 billion people around the world, many of whom reside in LMIC contexts, do not have adequate housing, and this is expected to increase to 2 billion people by 2030. This increase

BOX 6

COVID-19 AND OTHER SHOCKS IN COLOMBO, SRI LANKA

Until the COVID-19 lockdowns, most of Colombo's working-class communities were able to maintain a diverse food plate, eating three meals a day. In mid-2021, having not recovered from the loss of work due to lockdowns and accumulated debt, they began to feel the impact of Sri Lanka's ongoing economic crisis. Shortages of essential items and a fuel and energy crisis saw queues that lasted weeks and, by 2022, the situation brought the country to a standstill.

Many of the shocks faced by the communities in the last few years have not only been due to loss of income, accumulated debt and high income, but have also been due to the economic adjustments the country has been making as a part of International Monetary Fund reforms. At the height of Sri Lanka's economic crisis in 2022, when food inflation was 90 percent, electricity tariffs were increased by 75 percent, followed by an additional 65-percent increase in early 2023.

As a result, since 2021, households have had to stack energy (that is, use more than one form of cooking fuel), navigating spatial limitations as well as the availability and affordability of gas, kerosene, electricity and firewood. Stacking in this way requires planning and time, and impacts what is cooked. Households now prioritize food that cooks faster or can be eaten raw or without accompaniments.

Over the last four years, urban working-class families have significantly changed their food plate – eating fewer vegetables, proteins and fruits and cutting down on food quantity and even on the number of meals consumed in a day. In households with children, parents (especially mothers) are more likely to sacrifice their own nutrition for that of their children. The price of the ingredients is not the sole consideration; other costs of putting a meal together also have to be considered. For instance, households are less likely to cook chickpeas, not only because they are expensive, but because they require a long cooking time, and the families cannot afford the amount of cooking fuel required to prepare them. For these families, deciding what to eat requires taking into consideration interconnected non-food household expenses, such as increases in the value added tax and the cost of using electrical appliances, as well as women's time poverty. It is only by looking at the intersection of all these variables and the constellation of policies that we can understand the shifts in the food plate, as well as the gendered burden of crises.

The economic crisis in Sri Lanka has also affected children's nutrition and education. Cuts in social protection over the years have resulted the elimination of school meal programmes in most government schools in Colombo. At the same time, children are required to come to school with a nutritious meal (biscuits and buns are not allowed). As a result, on the days families are not able to provide such meals, children are not sent to school, exacerbating the learning loss that began during COVID-19. Added to this is the increase in the value added tax, which has increased the prices of school materials, bags, shoes, etc., and the increase in transport costs – additional reasons for school absenteeism in Colombo's working-class settlements. These impacts on children's nutrition and education will have generational impacts in these communities.

Source: Authors' own elaboration.

will occur primarily in Africa, where urbanization is occurring rapidly (Friesen *et al.,* 2020). In slums globally, an estimated 4.7 people share 1.7 rooms (approximately 9 to 11 square meters overall) (Dubey *et al.,* 2022). Due to space limitations, low-income housing, especially in informal settlements, often lacks bathrooms and kitchens. Food is often cooked in the room where people sleep and there is little space for food storage, thus affecting the quality and quantity of food cooked and consumed for the day. Often, prepared foods are purchased to circumvent the additional cost of fuel and time for cooking (Downs *et al.,* 2022; Gould *et al.,* 2022).

Inadequate housing also manifests in lack of access to other public services for the household, such as water, energy and fuel. Low-income communities also have less access to transportation (spatial access to markets, outlets, employment) and health services, which are critical in moderating the impact on food security and health outcomes. The additional costs households incur to meet their water, energy and fuel needs reduce the available budget for food. **While improved housing is rarely considered in FSN policy, it has been identified as a pivotal entry point to improve public health and a crucial element of the realization of the right to the city (The Lancet, 2024). As is evident in slum areas, the failure of right to the city undermines the right to food.** Box 6 illustrates the impact of housing and infrastructure stress on the food choices of working-class communities in Sri Lanka.

4.3.2 HOUSEHOLD COMPOSITION

Household structure and size also impact consumption patterns. Households with multiple income earners can pool financial resources, which may increase stability in food access. However, in U-PU areas, many low-income residents are engaged in short-term, unprotected and seasonal labour, which increases vulnerability to food insecurity.

One critical factor in U-PU areas is the increased proportion of women working outside the home. This significantly affects the time available for food acquisition, preparation and consumption, which have typically been viewed as women's work (Jabs *et al.,* 2007; Slater *et al.,* 2012; Constantinides *et al.,* 2021). This shift is reshaping food consumption, particularly in urban areas, with a rise in the consumption of quick-cooking foods, processed foods and street foods.

4.3.3 VALUE NEGOTIATIONS

Value negotiations refer to factors that compete with individual preferences within the family, that is, the negotiation required to meet competing basic needs and family preferences. For example, in Canada, nearly half of all adults living in severely food-insecure households delay, reduce or skip taking their prescription medications in order to address the food needs of the wider household (Men *et al.,* 2019). In South Africa, low-income women often buy hampers (pre-packaged parcels of food and other basic groceries) on pay day or when social grants are paid, in order to protect their financial resources from being used by men for non-essential items (Bowden, Even-Zahav and Kelly, 2018). In other cases, there may be competition over dietary choices between household members with divergent needs and interests. Finally, divergent food values across generations shape household dietary patterns (Drew *et al.,* 2023).

4.3.4 SUPPORT

Within U-PU areas, social capital is a vital component of meeting household food needs (Lee *et al.,* 2018; Nosratabadi *et al.,* 2020). This may involve social networks that are leveraged to access food, such as community kitchens, solidarity fridges and informal social networks (described in SECTION 3.4.4), or the ability to leverage knowledge and political power to access critical resources. Notably, social capital is unevenly distributed in U-PU settings, with many of the subpopulations most vulnerable to food insecurity being the least able to leverage social capital. Tied to the idea of social capital is support, which refers to family factors that enable healthy food choices, such as informational support or emotional support. Emotional support from spouses through companionship and motivation is key to adopting new dietary behaviours and shaping food choice (Ahluwalia *et al.,* 1998; Thornton *et al.,* 2006; Laiou *et al.,* 2020). In the context of rising diet-related, non-communicable diseases, shifting dietary behaviours to healthier choices requires emotional and social support from families, reinforced by communities (Banchani *et al.,* 2020; Tusubira *et al.,* 2021). Types of support and how much they impact physical and mental well-being, as well as overall dietary behaviours, appear to vary by gender and socioeconomic status (Banchani *et al.,* 2020; Ambikapathi *et al.,* Forthcoming).

4.4 PERSONAL FOOD ENVIRONMENT AND THE URBAN AND PERI-URBAN CONTEXT

4.4.1 AFFORDABILITY

Poverty is a key driver of food insecurity in U-PU areas. Low income impacts the relative affordability of food. Access to the formal employment sector remains low in urban LMIC settings, ranging from less than 25 percent in Africa to less than 50 percent in Asia and Latin America (Vilar-Compte *et al.,* 2021). Many U-PU residents survive through part-time or piece work, and many U-PU employment sectors are characterized by seasonality. Inconsistent income makes food budgeting difficult and leads to smaller, more frequent purchases of food, which often ends up being more costly than bulk purchasing (Cooke, 2012). Thus, any changes in the availability and prices of food are acutely noticed in food purchases and dietary patterns among low-income consumers (Riley and Legewegoh, 2014; Na, Gross and West, 2015; Ambikapathi *et al.,* 2018).

Urban diets vary significantly by income level. Up to 90 percent of the food in urban regions is purchased (rather than grown or shared) (Maxwell, 1990; Opiyo and Ogindo, 2018). A small proportion of the poor (with purchasing power of USD 0 to USD 2/day) and vulnerable middle class (purchasing power of USD 2 to USD 4/day) rely on their own production for consumption (Tull, 2018). The share of household income dedicated to food expenditure varies significantly around the world. In 2022, food accounted for just 6.7 percent of average household expenditure in the United States of America, compared to 59.0 percent in Nigeria. Of the 14 countries where food expenditure comprised over 40 percent of total household expenditure in 2022, all were in Africa and Asia (except for Ukraine, as a result of the war) (USDA, 2023a). In higher-income urban areas, there is higher demand for highly processed, convenience foods, due to time poverty.

It is also important to note that **expenses for basic needs to operate within a cash economy – food, water, fuel, energy, rent, education and many others – compete with each other, especially when there is no reliable income source** (Ruel, 2000; PMBEJD, 2024). **Food is the most flexible expenditure for low-income urban populations. As such, diet quality is sacrificed to meet other needs.** These factors collectively exert a significant influence on patterns of food consumption, not only in times of major shocks but also under any small price volatility in housing, fuel, water and energy (SEE BOX 6).

Finally, the true cost of a healthy diet is much higher than the global median of USD 3.54/person (Herforth *et al.,* 2020), given factors such as the costs of transport and energy (refrigeration and cooking). These embedded costs lead to shifts to more processed, shelf-stable and quick-cooking foods (Smith, Ng and Popkin, 2013).

4.4.2 DESIRABILITY

Desirability refers to preferences, acceptance, taste, attitudes, knowledge and skills. **In urban areas in particular, there is a shift in desirability towards more "modern" foods and beverages.** For example, in South Africa, there is an urban dietary preference for fried meat, rather than the boiled meat that is commonly consumed in rural areas, both because of its shorter preparation time and because boiling is viewed as "backward" and not modern. Being viewed as "urban" is an important identity marker for rural-to-urban migrants (Puoane and Tsolekile, 2018). Similar changes in cooking techniques have been noted in China (Zhai *et al.,* 2014). **Consumption of modern, highly processed energy-dense nutrient-poor foods and drinks is often viewed as more desirable to youth and children, where food choice is shaped by marketing and peer pressure and where exercising food choice is viewed as a means of exercising autonomy** (Neufeld *et al.,* 2022). These aspects of desirability overlap with increased accessibility of "modern" foods (a concept shaped by marketing) and with time- and energy-poverty to shape dietary choice. (This shift is exemplified by the global growth in consumption of instant noodles [Zhai *et al.,* 2014;

Ahmed, Kimeu and Adetayo, 2023]). Furthermore, limited food knowledge and cooking skills have been found to negatively impact the healthiness of foods consumed at home and to increase the consumption of food away from home (knowledge and cooking skills are typically lower in men and younger adults than women and older adults) (Lavelle *et al.,* 2020; Tani *et al.,* 2020).

4.4.3 PERSONAL ACCESSIBILITY

Spatial and temporal accessibility is a function of urban places, as described in Section 4.2.2. Here, personal accessibility refers to individual activity spaces and daily mobility, which is a function of place, transportation infrastructure and individual agency. **From a demand perspective, time poverty is universal across all age groups and socioeconomic levels, especially in urban settings, and this affects food choice, often towards foods high in sugar, salt and fat** (Devine *et al.,* 2006; Jabs and Devine, 2006; Jabs *et al.,* 2007; Slater *et al.,* 2012; Herforth and Ahmed, 2015; Turner *et al.,* 2018; Constantinides *et al.,* 2021). Spatial inequalities in U-PU areas exacerbate the time poverty of lower-income residents who often reside in peripheral areas, poorly connected to public transport. External food environment actors respond to these factors by locating street food vending businesses close to transport interchanges and by being most active during late-afternoon and evening peak commuting periods, responding to the time poverty of urban residents (Battersby and Haysom, 2018).

4.4.4 CONVENIENCE

Convenience refers to the relative time and effort of food preparation, cooking and consumption. The personal accessibility issues described in the previous section, combined with increased female participation in the labour force in urban areas, have led to a strong desire for convenience in the personal food environment. This often translates into the consumption of highly processed, quick-cooking or ready-to-eat foods in the household. However, the **desire for convenience also provides opportunities for street food vendors to meet household food desires by providing more traditional foods.** For example, in Zimbabwe, vendors sell precooked beans in order to reduce the time and energy cost of food preparation for consumers (Sibanda and von Blottnitz, 2018). Street food vendors' ability to sell healthy meals that meet convenience demands provides an opportunity to positively impact nutrition in U-PU areas.

In addition to increased consumption of convenience foods within the home, urbanization has resulted in an increase in consumption of food away from home (FAFH), particularly lunch meals. Types of FAFH also differ by income level, which has implications for diet and health. In high-income countries, higher socioeconomic-status (SES) households consume food from restaurants, while to lower SES households source FAFH from fast food and carry-out venues and from street food and informal prepared-food vendors, with major implications for diet quality (Lachat *et al.,* 2012; Wellard-Cole, Davies and Allman-Farinelli, 2022; Landais *et al.,* 2023, Abrahale *et al.,* 2019; Ashaley-Nikoi and Abbey, 2023). In fact, the fast-food revolution is one of the most significant contributors to the increased intake of red meat in the United States of America, and is increasingly associated with cardiometabolic diseases (Bahadoran, Mirmiran and Azizi, 2015).

4.5 URBAN CONTEXT AND FOOD ENVIRONMENTS

As presented in the previous sections, **consumer choices within U-PU food environments are shaped by several overlapping and interacting determinants in external, family and personal food environments. Each of these is shaped by the wider urban context in which food environments operate.** Neither external food environments nor the lived experiences of U-PU residents are independent of the spatial, socioeconomic, environmental or political contexts in which they operate. Therefore, it is essential to understand the interactions of the three food environments in specific contexts in order to develop policy and governance responses that can enhance U-PU FSN. As illustrated in Box 6,

external factors impact household food practices (acquisition, preparation, processing and cleaning) and external food environments in the context shocks. This highlights the need to understand the interactions in specific contexts in order to develop policy and governance responses.

4.6 DRIVERS OF FOOD CHOICE ACROSS INCOME STRATA

This chapter describes how the broader food environment (external, family and personal) shapes everyday food choices and, ultimately, shapes food consumption patterns and nutritional status over time. External food environments in particular are shaped by an areas' socioeconomic and infrastructural characteristics. Household and individual factors then shape consumer interactions within these external food environments. The family is an important social unit that pools, shares and decides on budgets, time and other resources that define the consumer interaction. This suggests the need for integrated policy actions across external, household and food environments, informed by the FSN needs and food system outcomes of different income groups.

Food choice in U-PU areas varies across income strata (TABLE 4). For the extremely poor (living under USD 2/day, estimated at 9 percent of

TABLE 4
DRIVERS OF FOOD CHOICE IN EACH FOOD ENVIRONMENT, BY INCOME CLASS

INCOME CLASS	SUPPLIERS (EXTERNAL FOOD ENVIRONMENT)	HOUSEHOLD FOOD ENVIRONMENT	PERSONAL FOOD ENVIRONMENT
Poor (USD 0–2/day) and vulnerable middle (USD 2–4/day)	Informal vendors and traditional markets Note: Food prices are a major driver of the quantity of food consumed.	Household size, physical access, gender roles, fuel costs, social capital and housing.	Income is the largest driver of FSN.
Lower-middle (USD 4–10/day)	Informal vendors and traditional markets Note: Food prices are a major driver of the quality of the diet consumed.	Household size, physical access, gender roles, fuel costs, housing and, increasingly, food away from home.	Income, as well as gender, food safety, preferences for fruits and animal-source foods (with increasing income), replace the food choice on legumes and vegetables.
Upper-middle (USD 10–20/day)	Supermarkets and traditional markets.	Food away from home and convenience and preferences for the quality (and quantity) of meat and produce. Convenience is a key factor.	Food safety, diversity and variety of foods, desirability.
Beyond middle (>USD 21/day)	Supermarkets, niche farmers' markets; luxury-goods markets.	Food away from home and convenience; preferences for luxury food items and preferences for the quality (and quantity) of meat and produce.	Desirability and diversity and variety of foods.

Source: Ambikapathi, R. 2024. Social Behavioral Challenges to Sustainable Food Systems. Presentation at Maximizing Agriculture to Enhance Nutrient Composition to Better Fulfill Dietary Recommendations, 30 January 2024. Online. National Academy of Sciences.

the global population), income is the largest driver of food security. For them, institutional food-environment interventions (such as school feeding programs) and social capital (vendor and community networks and relationships) have a tremendous impact on FSN. For the poor and lower middle (living on USD 2 to USD 10/day, estimated at 60 percent of the global population), income is still a large driver of dietary diversity. These households rely on FAFH, and other expenditures, such as fuel and water, drive food expenditure. For the upper middle income households (living on USD 10 to USD 20/day, estimated at 13 percent of the population), FAFH and convenience are key influences on their overall diet quality and nutrition. Lastly, for households beyond middle (over USD 21/day, estimated at 18 percent of the global population), desirability and FAFH drive their food choices. Two common reoccurring themes that modify these drivers of food choice are time use and gender, which link to larger implications of multiple forms of malnutrition within households and within communities.

4.7 CONCLUSION

The characteristics of food environments in U-PU areas are profoundly shaped by the urban context. The urban spatial form, spatial inequality, infrastructure distribution and quality, urban economy and urban cultural norms, *inter alia*, all inform the external, family and personal food environments (SEE TABLE 4). **Supply and demand are mutually reinforcing and are dynamic processes. However, they are often viewed as static by policy actors and, as such interventions are conducted in silos.** Time use is a key theme that affects an individual's ability to acquire and prepare foods, which is also further modified by gender roles. Other non-food expenditures (such as fuel and water) and housing infrastructure further influence food choices. In addition, decisions and policies beyond city and national borders affect food prices. Thus, understanding everyday food-choice decisions requires particular consideration of these main food and non-food factors at different scales. In order to shift food choices and reinforce healthy-eating behaviours, all these factors must be aligned in that direction.

If U-PU food systems are to be transformed by leveraging the power of changing U-PU consumer demands, it is essential to address the constraints and opportunities shaping food environments, especially for the large food-insecure populations residing in Africa and Asia. **By enabling greater choice and agency in the system, it is possible to harness the power of U-PU demand to transform food systems to be more sustainable and equitable.** This requires policy and governance interventions that extend beyond conventional food-system entry points.

CHAPTER 5

FOOD SECURITY AND NUTRITION IN URBAN AND PERI-URBAN AREAS

Street food in New York City, the United States of America, 2018. Urban diets are typically more diverse than rural diets, but lower in diet quality. They are typified by higher consumption of ultra-processed foods and food away from home.

KEY MESSAGES

- Urban and peri-urban food insecurity affects 1.7 billion people in the world, residing mostly in Africa and Asia.
- Food insecurity is particularly high in slum areas, due to the high incidence of poverty and poor living conditions.
- Food insecurity in U-PU settings has monthly hunger cycles, linked to high cost of living and income instability.
- Urban and peri-urban areas are epicentres of multiple burdens of malnutrition.
- Urban diets are typically more diverse than rural diets, but lower in diet quality. They are typified by higher consumption of ultra-processed foods and food away from home.

5.1 INTRODUCTION

A central message of this report is that U-PU food insecurity and malnutrition are not simply conditions that occur in U-PU areas, but that they are profoundly shaped by the relationships between people, U-PU food-system factors, and non-food-related urban-system factors, including housing, transportation, employment opportunity and the cash economy. This chapter provides evidence on the state of U-PU FSN. It highlights the extent of food insecurity and malnutrition in U-PU areas and draws attention to variability within these contexts. The changing nature and consequences of U-PU diets are also discussed.

The chapter highlights the need for better disaggregation of data and for more integration of qualitative data to enable policymakers to understand the interactions between food-system and non-food system factors that shape diets and nutrition.

5.2 STATE OF URBAN AND PERI-URBAN FOOD SECURITY

5.2.1 GEOGRAPHIC VARIATION IN URBAN AND PERI-URBAN FOOD INSECURITY

The burden of food insecurity worldwide increasingly lies in U-PU areas (FIGURE 11). Of the 2.2 billion people in the world experiencing severe or moderate food insecurity, 1.7 billion (77 percent) reside in U-PU settings. Of those experiencing severe food insecurity (experiencing hunger), 76 percent reside in U-PU settings. (FAO, 2023a). So, while **the proportion of the rural population experiencing food insecurity may be higher than that of the U-PU population, numerically there are far more people in U-PU areas experiencing food insecurity than there are in rural areas** (SEE BOX 7). Figure 11 illustrates the differences in prevalence (relative magnitude) and the population in millions (absolute magnitude) of severe and moderate food insecurity.

The prevalence of food-insecure households can vary substantially by region, even within HICs. For example, in Canada, the prevalence of food insecurity is slightly higher in rural than in urban areas (Idzerda *et al.*, 2022), while in the United States, the prevalence of food insecurity is highest for households in principal cities of

BOX 7
INTERPRETING FOOD-SECURITY DATA CALCULATIONS

The 2023 SOFI report illustrated that the prevalence of severe and moderate food insecurity in rural areas was 33.3 percent, compared to 28.8 percent among peri-urban residents and 26.0 percent among urban residents (FAO *et al.,* 2023a). A such, the proportion of food-insecure rural residents is greater than the proportion of food-insecure urban and peri-urban residents. However, as the table below shows, a very different perspective on where the burden of food insecurity lies comes to light if you divide the number of food-insecure individuals per location by the total number of food-insecure individuals. Using this calculation, 76.4 percent of the world's food insecure population lives in urban (40.9 percent) and peri-urban (35.5 percent) areas (FAO *et al.,* 2023a).

	1. Urban and peri-urban	2. Rural	3. Total
A. Number of moderately or severely food-insecure people	1 688 708	521 925	2 210 634
B. Total population	6 201 623	1 567 343	7 768 966
Proportion of food-insecure people, by share of regional population	27.2% (1A/1B)	33.3% (2A/2B)	28.5% (3A/3B)
Proportion of world's food-insecure population, by region	76.4% (1A/3A)	23.6% (2A/3A)	

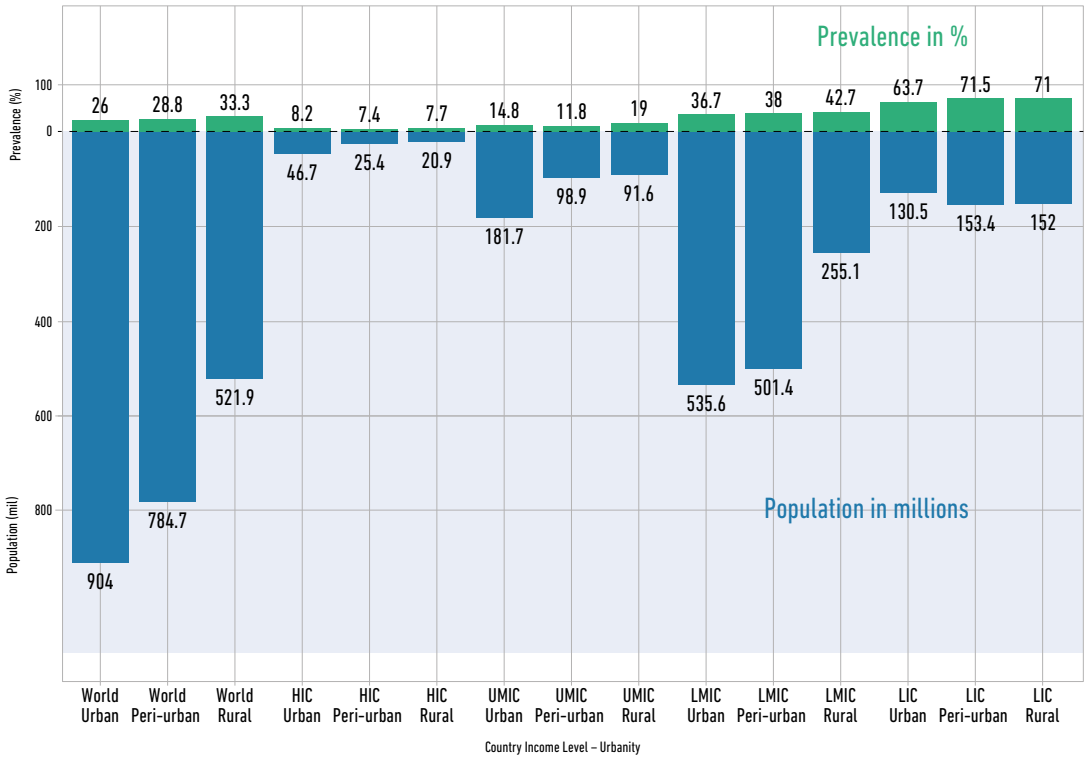
Further disaggregation according to the degree of urbanization (DEGURBA) classification, and by world region or income, shows that in Africa 69.6 percent (551.1 million out of 802.8 million) of the people living in moderate or severe food insecurity resides in urban and peri-urban areas, while in Asia 82.3 percent (900.3 million out of 1 093.6 million) of the severe or moderately food insecure population resides in urban and peri-urban areas.

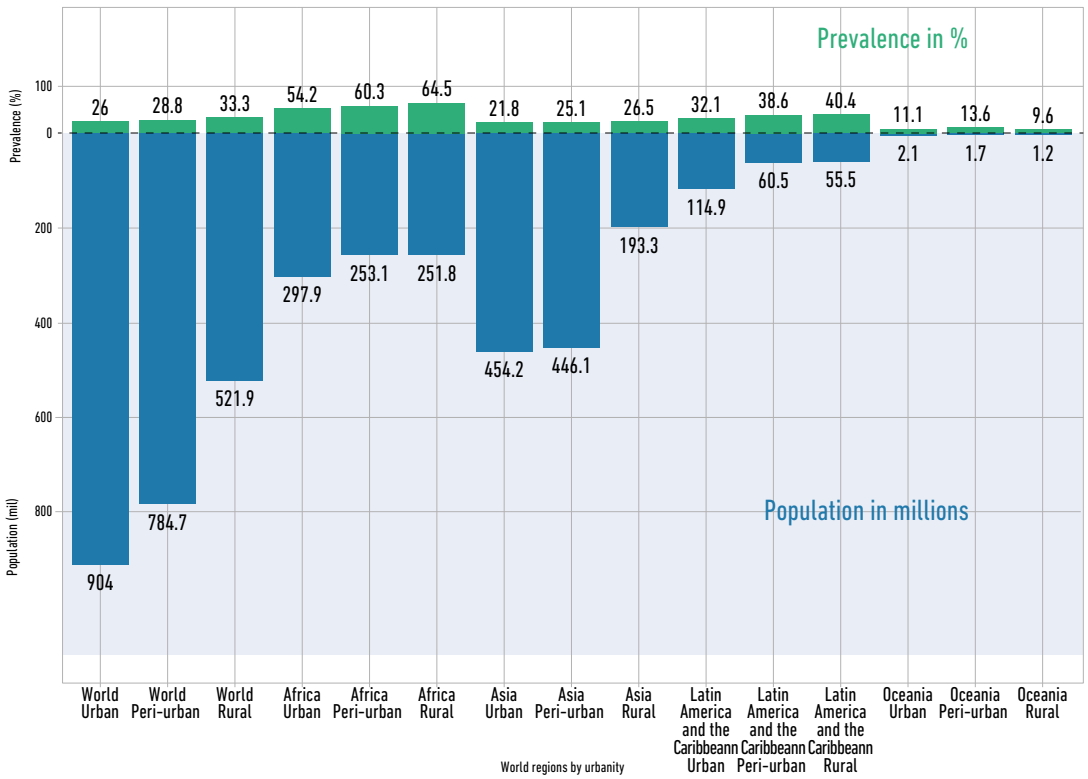
metropolitan regions (12 percent) and lowest in suburban areas (9 percent) (USDA, 2023b). **Greater attention to U-PU food security is necessary if FSN and SDG 2 goals are to be achieved, particularly in the context of projected continued urban growth.**

Being able to disaggregate data along geographic and intersectional demographic lines is important for food-security policy. For example, a study in Ethiopia suggests that the youth/adolescent age group bears the major burden of food-price shocks, where boys may be more vulnerable than girls, although both have very high levels of food insecurity (Hadley *et al.,* 2009; Smith *et al.,* 2023). Work in Ethiopia shows that strengthening social safety nets, especially school feeding programmes will target youth under 18 years of age (Smith *et al.,* 2023). However, youth above 18 years of age are not targeted by any social safety nets. These intersectional data highlight a departure from the traditional narrative of who is affected by food insecurity and make the case for holistic approaches that leave no one behind. Both **rural and U-PU areas need tailored policies that cannot be achieved without the public availability of disaggregated and intersectional data.** The FAO and Global Diet Quality Project (BOX 8) have played an important role in improving access to these kinds of data.

FIGURE 11

ICEBERG PLOTS OF PREVALENCE (TOP) AND POPULATION NUMBERS (BOTTOM) WITH SEVERE AND MODERATE FOOD INSECURITY





Notes: Severe and moderate food insecurity is shown by prevalence in percentage (top y axis) and millions in numbers (bottom y axis), by degree of urbanization (DEGURBA) in 2022 (GHSL, n.d.). The top panel is by World Bank classification of income level and the bottom panel is by region.
Source: FAO. 2023a. Suite of Food Security Indicators. In: *FAOSTAT.* [Cited 27 February 2024]. https://www.fao.org/faostat/en/#data/FSFAO

BOX 8

DIET QUALITY DATA AS A GLOBAL PUBLIC GOOD

The Global Diet Quality Project provides the world's first primary data on diet quality across countries, collected in the adult population over age 15 years. The project has changed the narrative on global diet quality by creating a publicly available source of dietary quality data, disaggregated by gender and urbanicity (Global Diet Quality Project, 2024). The data have been collected in the Gallup World Poll. The new data have been incorporated into the Food Systems Countdown Initiative, an independent monitoring framework following the United Nations Food Systems Summit, and potentiate the inclusion of diet quality within the SDGs.

These data were collected using the diet quality questionnaire (DQQ), which uses food groups to measure diet quality. It takes five minutes to administer the questionnaire and it requires no specialized expertise on the part of enumerators, reducing costs and training requirements to a fraction of that required by traditional approaches to diet measurement and analysis. While not providing detailed data on quantities consumed, this monitoring approach lowers the barrier to entry for dietary data collection, enabling any government agency, organization or survey effort to collect data for indicators of diet quality at population level. The DQQ is harmonized with the Demographic and Health Surveys and Living Standards Measurement Study for collecting data on Minimum Dietary Diversity for Women (an indicator of nutrient adequacy) and complementary indicators of diet quality related to non-communicable diseases. Country-adapted, translated DQQ instruments (for 130 countries, to date) are available as global public goods for consistent data collection across survey efforts.

Because the DQQ survey module is a public good, city planners and city health departments can implement it for their own situation analysis. Often, urban food policy can shift more nimbly than national or regional policy, and the ability to gather data for dietary indicators at low cost can help inform urban food policies. Organizations can use the DQQ to collect their own data and analyse it easily to get timely, actionable insights. By identifying dietary risk factors prevalent in urban populations, the DQQ can equip city planners and policymakers with the data necessary to understand the prevailing dietary gaps.

The majority of the urban population in the LMIC setting now resides in secondary cities and towns (Cattaneo, Nelson and McMenomy, 2021; Riley and Crush, 2023). **These secondary cities and towns have higher rates of food insecurity than the larger urban areas due to lower formal wages and livelihood opportunities, lower entitlements and social protection, and less retail food environment diversity.**

While food insecurity is higher in secondary cities, these cities' dietary quality is based on their connectivity to other cities and trade routes. A recent study in Tanzania found that households living in secondary cities were more likely to fulfil the dietary reference indicators for all nutrients than households in Dar es Salaam, who consumed more fat, saturated fat and sugar, but less protein, fibre and key micronutrients (Ameye, 2023). Similar trends have been found across secondary cities in LMIC contexts (Zimmer *et al.,* 2022; Riley and Crush, 2023; Speich *et al.,* 2023). In Zambia, the size of towns and their transportation connectivity play an important role in food-sourcing patterns in secondary cities (Zimmer *et al.,* 2022). Smaller secondary towns in Zambia that are isolated rely more on the rural food environment for staples, while more-connected secondary towns rely on both urban-to-urban sourcing and rural-to-urban sources. Connectivity (urban to urban) sourcing enables access to higher-value foods such as meat, sugar, oil and other processed foods (Zimmer *et al.,* 2022). The focus on secondary cities and the various characteristics that shape household food and nutrition security in such cities is growing, as these cities are expected to grow with global population growth. Systematic synthesis of

secondary cities remains low, especially in South Asia and Latin America (Riley and Crush, 2023; Speich *et al.,* 2023).

While the notion of hungry seasons is well accepted within rural food security, it has been found that urban food security also has distinct periods of increased food insecurity. While food availability and price changes play a role in these cycles (Grace *et al.,* 2017), urban hungry seasons are more closely related to the various urban costs of living (PMBEJD, 2023). The hungry seasons are periods of increased household expenditure and reduced household income, as seasonal employment in sectors such as construction and public works dips over these time periods. These are also periods when children are out of school and therefore not benefitting from school meals. During these periods, households will decrease expenditure on food to meet other household needs, including the so-called "heat or eat" dilemma experienced in response to rapid increases in energy costs (Bardazzi, Bortolotti and Pazienza, 2021; Burlinson, Davillas and Law, 2022). There are also cycles of food insecurity within months, as households find there is "more month than money" and adjust diets, food quality, the number of meals and food-sourcing strategies accordingly (Whiteman, Chrisinger and Hillier, 2018; Ferrer *et al.,* 2019). This trend has been exacerbated by the recent global cost-of-living crisis (HLPF, 2022).

5.2.2 CHARACTERISTICS OF URBAN AND PERI-URBAN FOOD-INSECURE PEOPLE

Levels of food insecurity within U-PU areas vary according to various household and individual characteristics. It is therefore important to view food insecurity through an intersectional lens (HLPE-FSN, 2023).

In addition to regional and spatial differences, food insecurity is also higher among women than men. **Gender disparities in food insecurity result from differential exposure to shocks and differences in education, income, opportunities, social networks and entitlements.** These disparities worsened over the COVID-19 pandemic due to the loss of livelihoods and income, lower access to school food programmes (hence, increased demand for food within households), and a substantial increase in caregiving activities (Alvi and Gupta, 2020; Delbiso, Kotecho and Asfaw, 2021; FAO *et al.,* 2023a). This "gender gap" has decreased in Asia and Latin America in the last two years since the pandemic, but has stagnated in Africa. Very little is known about differences within the gender gap between urban and rural contexts – even the most recent SOFI report on urbanization does not report data by gender within urban, peri-urban and rural contexts (FAO *et al.,* 2023a). Research in African cities and in Brazil indicate that, although female-headed households generally experience higher food insecurity than male-headed households, when factors such as household income or education of household head are controlled for, this disadvantage disappears and sometimes even becomes an advantage (Riley and Dodson, 2020). In part, this is attributed to women's greater role in food-purchase and consumption decisions, despite having lower income (Levin *et al.,* 1999). Female-headed households can be as high as 50 percent of all urban households in Africa (Dodson, Chiweza and Riley, 2012). In Southeast Asia, gender differences in food insecurity are mitigated by higher education and social support. Meanwhile, in sub-Saharan Africa, food insecurity differences across genders is mitigated by higher education and household income (Broussard, 2019). Again, available data needs better georeferencing and enough sample size to at least consider several demographic factors, such as sex, location and age, and at least two to three social positions, such as race, ethnicity, religion or caste, and socioeconomic status disaggregation. **It is essential to disaggregate available data by multiple intersecting factors, in order to pinpoint, address and customize food-security policies for various urban contexts.**

Due to socioeconomic disparities, **food insecurity is highly unequal in U-PU areas and among migrant populations. Urban informal settlements (slums or slum-like settlements) have high food insecurity.** In South Africa, the nationally representative South African National Health

and Nutrition Examination Survey found that 68.5 percent of participants from urban informal areas were food insecure or at risk of hunger, compared to 44.6 percent in urban formal areas (Shisana *et al.,* 2013). Similarly, in India, urban slum areas experience higher food insecurity than urban non-slum areas. Slum areas not only represent a concentration of people living with income poverty, but living conditions in slum areas also exacerbate food insecurity and malnutrition. Vector-borne diseases, such as Zika virus disease, dengue and leptospirosis, are highly prevalent in slums due to poor housing conditions and lack of access to water and sanitation (Costa *et al.,* 2017). For example, slums in Salvador, Brazil, have a high rat population and, during flooding, residents residing at the bottom of the slum valley had higher exposure to contamination due to stagnant, muddy soils (Hagan *et al.,* 2016; Costa *et al.,* 2017). These risks negatively affect nutrition outcomes.

An estimated one in four people in urban settings (or one billion people) live in informal settlements (slums) worldwide. This will grow substantially in the future, with urbanization (UN-DESA, n.d.). The achievement of food security should, therefore, be viewed through a systems lens that considers the interplay of economic, social, political, environmental and spatial factors in shaping individual and household food-security outcomes.

Significant variation in food insecurity incidence is found among different slum-area populations in India, but the lack of disaggregation based on social position and demographics makes it harder to target policies effectively (Agarwal *et al.,* 2009; Maitra, 2017; Sethi *et al.,* 2017; Anand *et al.,* 2019; McKay, Sims and van der Pligt, 2023). Meanwhile, migration is also associated with severe forms of food insecurity (Smith and Floro, 2020). Multiple studies highlight high rates of food-security outcomes among cross-border migrants (Napier *et al.,* 2018; Carney and Krause, 2020; Hayden, 2023).

Migration is often seen to provide protection from food insecurity, especially though remittances (urban to rural, or urban to urban) and sharing foodstuffs (rural to urban) (Crush and Caesar, 2018). However, during shocks, as noted during the COVID-19 pandemic, there is an increased risk of food insecurity, through loss of income, lack of social support, and higher risk of exposure to the virus (Orjuela-Grimm *et al.,* 2022). In Mexico, international migrants from Central America not only face similar food-insecurity challenges to residents of low-income and poor urban households, but also face challenges due to lack of documentation, which limits access to state social protection programmes, and increases isolation, due to poor and unstable housing conditions (Hayden, 2023).

Urbanization and other economic and social changes have resulted in a shift away from traditional infant and young-child feeding practices, including breastfeeding. Increased participation of women in the labour force, particularly in urban areas, and the related use of breastmilk substitute has resulted in compromised breastfeeding practices. For example, rapid economic expansion in China coincided with increased marketing of breastmilk replacements (Xu *et al.,* 2009). Urban children in different settings in LMICs are less likely to be breastfed optimally than rural children (Oommen *et al.,* 2009; Thu *et al.,* 2012; Wallenborn *et al.,* 2021). In Nairobi, for instance, research in slums indicates that barely 2 percent of children are exclusively breastfed (Wanjohi *et al.,* 2016).

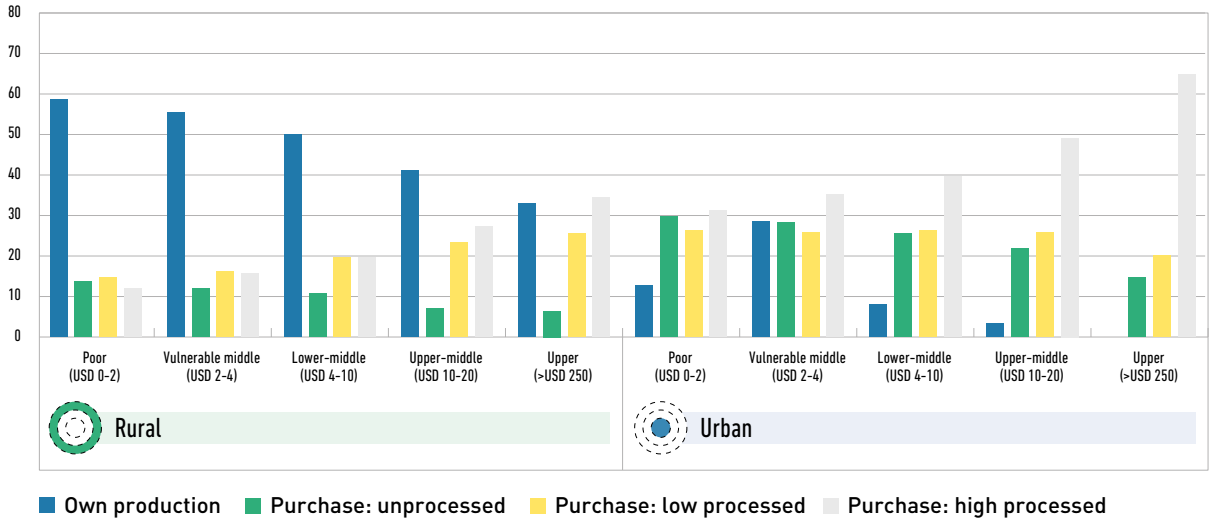
5.2.3 URBAN AND PERI-URBAN AREAS ARE EPICENTRES OF UNEVEN DIETARY AND NUTRITION TRANSITION

Urban and peri-urban regions are the epicentres of nutrition transition. The typical nutrition transition is characterized by a decline in undernutrition rates and an increase in overweight and obesity, caused by shifts to diets in heavy in calories, fats, oils, sugar and salt, combined with less physical activity (Popkin, 1993, 2006, 2014; Popkin and Ng, 2022). However, these rates exhibit significant unevenness, resulting in the co-existence of multiple burdens of malnutrition, including undernutrition, micronutrient deficiencies, overweight and obesity (Jones, Acharya and Galway, 2016; Kadiyala *et al.,* 2019; Popkin and Ng, 2022). A nutritional transition in LMICs is observed in children due to high availability, affordability and, consequently, high

consumption of foods high in sugar, salt and fat (Popkin, Adair and Ng, 2012). Urban environments are often unhealthy, characterized by pervasive food advertisement and a lack of time to cook healthy meals (SEE CHAPTER 4). **The nutrition transition has resulted in a rapid increase in overweight and obesity in LMICs, including childhood obesity** (Ng *et al.,* 2014; Global Panel, 2017; WHO, 2023b).

The unevenness of dietary and nutrition transition is primarily a result of the rapid food-system changes that have unfolded in the last 30 years in Asia, Africa and Latin America through trade liberalization, foreign direct investments, agricultural subsidies, and the three emerging and co-occurring agri value chain revolutions (the supermarkets, food service and the quiet midstream) in LMICs (Hawkes, 2006; Popkin, 2014; Reardon *et al.,* 2021). Historically, port cities and other coastal urban areas were the first places where imported foods were distributed (Drakakis-Smith, 1991). Because of the population density, urban inequalities and food-choice demands, urban areas are often the major areas for the distribution of processed foods high in sugar, salt and fat, that are becoming more affordable compared to healthy foods, particularly in LMIC contexts (Bosu, 2015). Figure 12 illustrates the higher purchase of highly processed foods in urban areas of six African countries.

FIGURE 12
PERCENTAGE OF MONETARY VALUE OF FOOD CONSUMED FROM DIFFERENT CATEGORIES



Notes: Data was collected from: Ethiopia 2004/2005, Uganda 2009/2010, Tanzania 2010/2011, Mozambique 2008/2009, Malawi 2001/2011, South Africa 2010
Source: Global Panel on Agriculture and Food Systems for Nutrition. 2016. *Food systems and diets: Facing the challenges of the 21st century.* London.

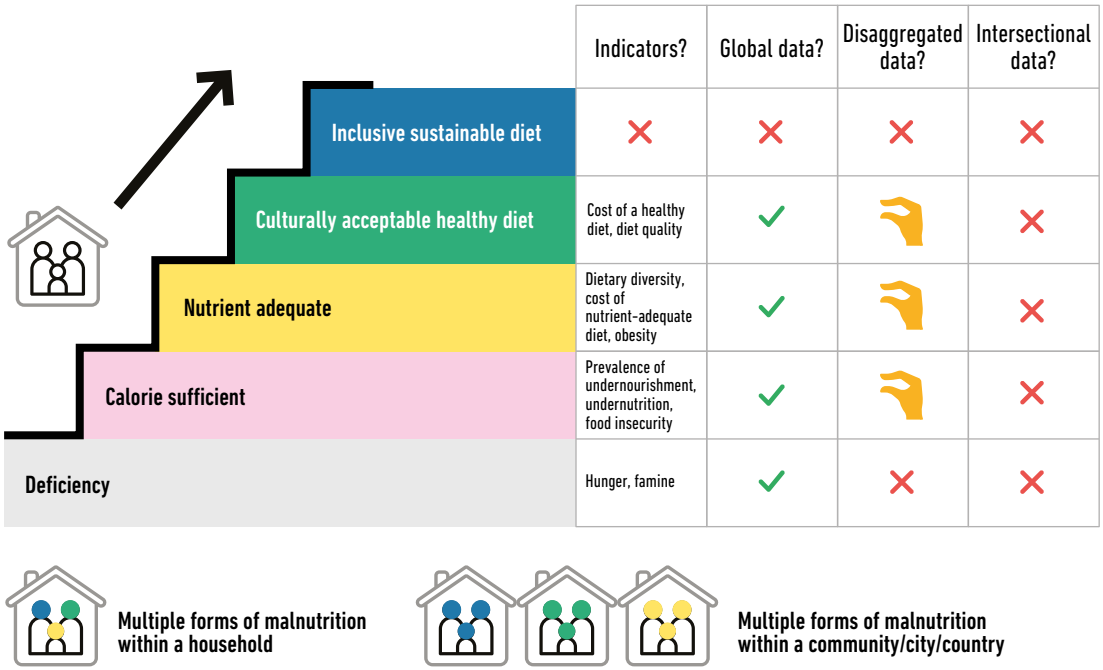
Obesity prevalence has increased over the last several decades in both HICs and LMICs (WHO, 2005; Popkin, Corvalan and Gummer-Strawn, 2020). It is increasing particularly rapidly in LMICs and LMICs are projected to account for three-quarters of the world's obese population by 2025 (WHO, 2005; Jaacks *et al.,* 2019; NCD-RisC, 2019). Traditionally, overweight and obesity has been considered a disease of the affluent in LMICs, but evidence in different settings indicates that this is changing, with the burden of overweight and obesity shifting to lower socioeconomic groups (Ziraba *et al.,* 2009; Jones-Smith *et al.,* 2012; Ford, Patel and Narayan, 2017; Mbogori *et al.,* 2020; Daran and Levasseur, 2022; Daran, Levasseur and Clément, 2023). A study conducted among poor neighbourhoods in urban areas of two African countries (Accra, Ghana and Nairobi, Kenya) showed widespread consumption of unhealthy, energy-dense foods and beverages

(Holdsworth *et al.*, 2020). **The policy agenda for hunger and poverty reduction in the twenty-first century, especially in the context of LMIC settings, needs to address these emerging challenges of urbanization and globalization and the consequent changes in diets and lifestyles, even as it pursues the unfinished challenge of undernutrition from the last century** (Pingali, Stamoulis and Stringer, 2006).

Efforts towards optimal FSN require data disaggregation by geography, social position and position within the household. Figure 13 illustrates the current state of evidence as a household climbs the ladder towards optimal dietary and nutrition transition. It illustrates the household climbing up the ladder of sufficiency while, within the household, members have multiple different levels of deficiency and sufficiency. Often, women experience higher food-insecurity rates than men, as they nutritionally buffer for their children (Block *et al.*, 2004; Piperata and Dufour, 2021; FAO *et al.*, 2023a). Women also have higher rates of obesity and anaemia, compared to men. Various forms of malnutrition, such as obesity in women and stunting in children, co-exist within the household (SEE SECTION 5.2.4), which highlights the need to disaggregate FSN indicators within households.

For most indicators in the ladder towards optimal diets and nutrition, global public data at the national level is available. Very few datasets provide disaggregated data, and none of them provide intersectional data, even by two basic axes such as sex and urban/rural location. For example, no current estimates of hunger are available by rural/urban areas by age, although generalized trends of urbanization, demographic transition and youth migration patterns, as well as the rise in the absolute number of people in urban poverty, suggests that a good proportion of this might be younger age groups in U-PU areas (IFPRI, 2017; HLPE, 2023; WFP, 2023a). Lastly, there are no universal indicators for inclusive sustainable diets; that is, sustainable diets that are affordable and culturally acceptable, or nutritious diets that are resilient against shocks (He *et al.*, 2021; Conrad, Drewnowski and Love, 2023).

FIGURE 13
LADDER TOWARDS OPTIMAL FOOD AND NUTRITION SECURITY FOR HOUSEHOLD MEMBERS

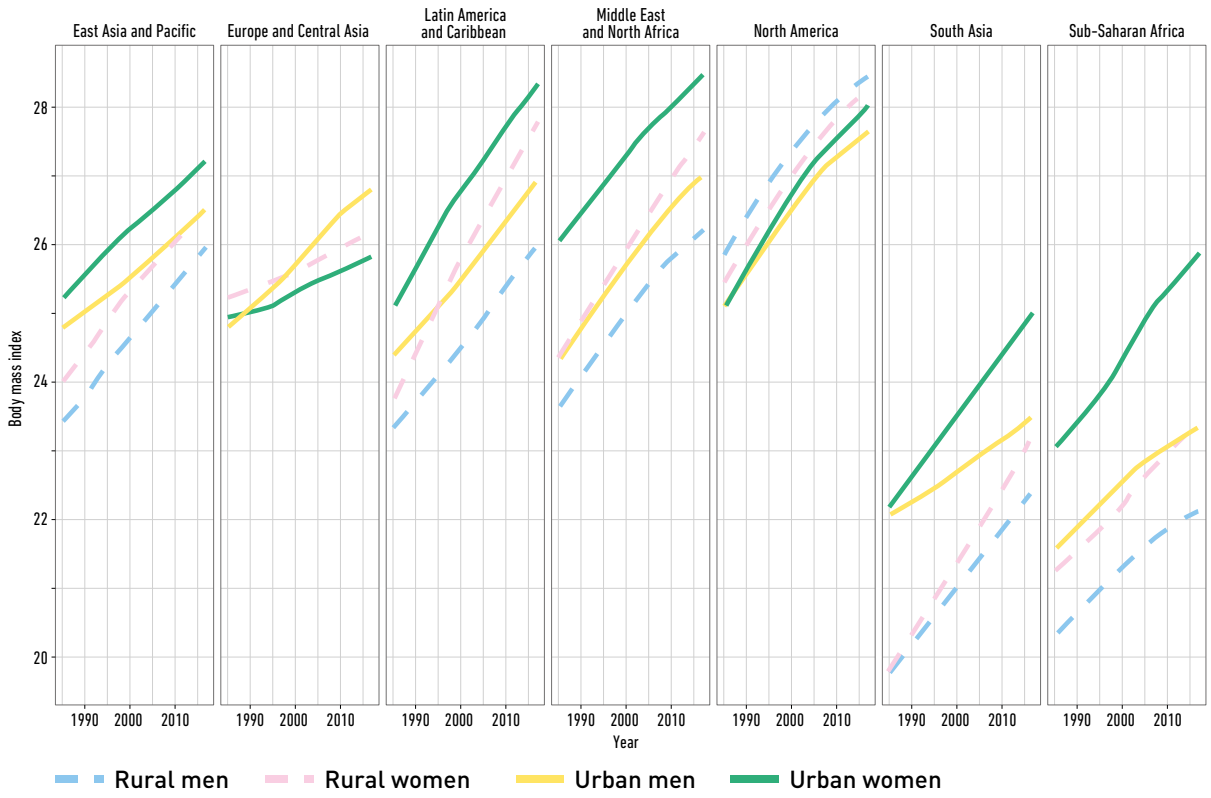


Source: Authors' own elaboration, adapted from FAO, IFAD, UNICEF, WFP & WHO. 2023a. *The State of Food Security and Nutrition in the World 2023. Urbanization, agrifood systems transformation and healthy diets across the rural–urban continuum.* Rome; and Food Prices for Nutrition Project, Tufts University; and Tufts University. n.d. Food Prices for Nutrition – Diet cost metrics for a better-fed world. In: *Food Prices for Nutrition.* [Cited 27 February 2024]. https://sites.tufts.edu/foodpricesfornutrition/

5.2.4 GENDERED NUTRITION TRANSITION

The nutrition transition has been demonstrated to have clear sex and gender differences in obesity, where women have much higher obesity rates than men (Kanter and Caballero, 2012; Aiyar, Rahman and Pingali, 2021), as illustrated in Figure 14.

FIGURE 14
URBAN AND RURAL RATES OF BODY MASS INDEX BY SEX, 1990–2010



Source: Ambikapathi, R., Baye, K., Cavatassi, R., Schnieder, K., Davis, B. & Neufeld, L. Under review. Pathways and Policies to Improve Nutrition under Resilient and Inclusive Transformation. *Global Food Security.* Data sourced from NCD Risk Factor Collaboration (NCD-RisC). 2019. Rising rural body-mass index is the main driver of the global obesity epidemic in adults. *Nature,* 569(7755): 260–264. https://doi.org/10.1038/s41586-019-1171-x

In all LMIC areas, the body mass index of urban women and men has exceeded that of their rural counterparts, with the greatest urban/rural gap being in sub-Saharan Africa (FIGURE 14). However, globally, body mass index increased at the same rate or faster in rural areas than in urban areas between 1985 and 2017 (NCD Risk Factor Collaboration, 2019). This was true in both LMICs and in HICs, with the exception of women in sub-Saharan Africa (NCD Risk Factor Collaboration, 2019). In some HICs, obesity prevalence tends to be higher in rural areas than in urban areas. In Canadian provinces, for example, the prevalence of obesity among adults is 32 percent in rural areas, compared to 26 percent in urban areas (Canadian Risk Factor Atlas). In the United States, 34 percent of rural adults are obese, compared to 29 percent of urban adults (CDC, 2018). On the other hand, in Europe, there are no differences in overweight/obesity between rural and urban areas (Peytremann-Bridevaux, 2007).

Several other factors influence obesity and overweight and related health aspects. For instance, women's education level is an

important factor in increasing obesity and overweight, with a higher increase among less educated women (non-educated and primary-educated women) compared to women with secondary or higher education (Ziraba *et al.,* 2009; Daran and Levasseur, 2022; Daran, Levasseur and Clément, 2023). Additionally, the physical urban environment (and income inequality) shapes physical activity, leading to gender differences in energy expenditure (Althoff *et al.,* 2017; Adlakha and Parra, 2020; Tcymbal *et al.,* 2020; Boakye *et al.,* 2023). Globally, 34 percent of the women are classified as inactive, compared to men (28 percent) (Hallal *et al.,* 2012). Availability and ease of public transport, safety of bike lanes, and distance to daily destinations were significant factors that improved women's physical activity in urban spaces. While, for men, recreational gym equipment in playgrounds, pocket parks and street networks (such as dead-end streets) were significantly associated with greater physical activity (Adlakha and Parra, 2020; Tcymbal *et al.,* 2020).

5.2.5 MULTIPLE BURDENS OF MALNUTRITION

The multiple burden of malnutrition (concurrent manifestation of undernutrition, micronutrient deficiencies, and overweight and obesity) has been documented in U-PU areas, particularly in LMICs (in sub-Saharan Africa, South Asia and Central America) (Popkin, Corvalan and Grummer-Strawn, 2020, Bose, Mondal and Sen, 2022). Urban factors shaping these outcomes are discussed in Chapter 2 and Chapter 4. The diet transition, coupled with limited physical activity, has resulted in a rapid increase in overweight and obesity in LMICs, including childhood obesity (Ng *et al.,* 2014; Global Panel, 2017, Popkin, Corvalan and Grummer-Strawn, 2020; WHO, 2023b). A study in six secondary cities in three LMICs (Kenya, Bangladesh and Rwanda) showed that urban areas experience a substantial increase in food insecurity, predisposing households to the multiple forms of malnutrition. In Malawi, the prevalence of co-occurrence of obesity or of obesity with any micronutrient deficiency among urban-dwelling women is ~33 percent, much higher than the prevalence among rural women (~9 percent) (Rhodes et. al., 2020). Additionally, adult underweight prevalence decreased by close to 13 percent, while overweight/obesity doubled, from 10 percent to 21 percent, increasing more in rural and urban slum households than in non-slum households (Nguyen *et al.,* 2021). Overall, the rate of child stunting is going down at a much slower pace in urban areas compare to rural areas.

A paradox exists in slum settings in LMICs. **Despite high levels of poverty and undernutrition, slum children also experience remarkable levels of overweight and obesity, stunting and micronutrient deficiency.** For example, in the same settings in Nairobi slums where close to 50 percent of children under five years of age were found to be stunted, close to 10 percent were found to be overweight or obese. Additionally, one-third of their mothers were found to be underweight, while another third were found to be overweight or obese (Kimani-Murage *et al.,* 2015). A study conducted among Bengali slum dwellers in India also indicated the co-existence of overweight/obesity with undernutrition within households. The prevalence of co-existence of an overweight mother with a stunted child in the same household was 12.4 percent (Paul and Chakrabarty, 2021). Another study conducted among schoolchildren aged 6 to 19 years in Chetla, Kolkata slum in India, indicated co-existence of underweight and overweight or obesity in the same population, whereby close to 10 percent of the children were stunted and close to one-quarter were thin, while 11 percent had overweight or obesity (Bhattacharya *et al.,* 2021). Similarly, a study in the slums of Dhaka City indicated co-existence of underweight with overweight among mothers of children under five years of age. The prevalence of underweight and overweight/obesity among these mothers was 13.4 percent and 45.3 percent, respectively (Shapla, 2023). Child stunting levels across the six secondary cities in Bangladesh, Rwanda, and Kenya ranged from about 8 percent to about 47 percent, while about half the adult women

were overweight (between 42 percent and 56 percent) (Barth-Jaeggi et al, 2023).

Child undernutrition rates disaggregated by poverty in U-PU areas are as high as those of rural areas. There is a significant location gap for stunting, where the child stunting rate in urban areas is 22 percent, far lower than the rate in rural areas (36 percent) (FAO *et al.,* 2023a). While these rates appear proportionally lower in urban areas, disaggregation by poverty in LMIC urban areas reveals child stunting rates that are as high as those in rural areas, in some cases even higher (Assaf and Juan, 2020). For example, Bangladesh's 2014 nationally representative survey reveals that 48 percent of the children in urban poor areas (proxy for slums) were stunted, compared to 38 percent in rural areas (Assaf and Juan, 2020). Additionally, for context, the binary rural–urban indicator shows that 40 percent of Bangladesh is urban; however, when examined by the DEGURBA classification, urban areas constitute 35 percent of the population while peri-urban areas (urban clusters) constitute an additional 54 percent of the population. Thus, 89 percent of the Bangladeshi population resides in U-PU areas (European Union, n.d.). Hence, numerically, the stunting likely has a higher numerical burden in U-PU areas. In Pakistan (2018 survey), urban poor areas have child stunting rates that are much higher (56 percent) that those of rural areas (41 percent). Similar results are observed for child anaemia, where the urban poor in LMIC contexts have rates as high as those of rural populations. In Ghana, child anaemia rates are similar in urban poor vs rural areas (52 vs 46 percent, respectively, according to the 2014 survey). While in Haiti, the urban poor have significantly higher rates of anaemia (57 percent), compared to the rural population (37 percent). Overall, the disaggregated burden reveals a different story, where urban poor children have similar burdens as rural children. Further, analysis by numerical burden, including both U-PU areas, shows that there are more undernourished children residing in urban areas compared to rural areas, which is similar to the food insecure population of urban and rural areas.

Globally, child-wasting levels are significantly lower in urban areas (8 percent) than in rural areas (12 percent) (FAO *et al.,* 2023a) and among children over two years of age (Karlsson *et al.,* 2022). Child-wasting burden is greatest in Asia, with significant rural–urban differences. Regional disaggregation of urbanity, however, reveals a different narrative regarding the urban vs rural burden. In Southeast Asia (Cambodia, the Lao People's Democratic Republic, Myanmar, Thailand, Timor-Leste and Viet Nam), prevalence of child wasting ranged from 4 to 11 percent, where residing in urban areas substantially increased the risk of wasting, even after adjusting for wealth and access to drinking water (Mutunga *et al.,* 2020). In South Asia (Afghanistan, Bangladesh, India, Maldives, Nepal and Pakistan), the prevalence of child wasting ranged from 9 to 21 percent, where only Nepal had higher prevalence of wasting in urban areas compared to rural areas. However, stunting rates were much higher in urban India, once adjusted for household and maternal covariates (Harding, Aguayo and Webb, 2018). Wasting in China has smaller rural–urban disparities and, in some regions, there is a reversal towards a rural advantage (Dong *et al.,* 2019). Multiple forms of undernutrition among children (occurrence of wasting and stunting together) are higher in South Asia, especially among older children. This is because children who experience growth faltering at a younger age are more likely experience growth faltering at a later age (Mertens *et al.,* 2023).

Meanwhile, rates of child overweight do not have a clear urban-rural difference (LBD Double Burden of Malnutrition Collaborators, 2020). Systemic factors, including household education and economic access, community access to water, sanitation practices, health services and sufficient diets, substantially impact both chronic and acute malnutrition. There is some evidence that acute child malnutrition in urban Africa is primarily driven by high food insecurity, whereas in Asia, it is primarily associated with maternal biological factors, such as low body mass index (Amugsi, 2014; Harding, Aguayo and Webb, 2018; Ssentongo *et al.,* 2021).

Micronutrient deficiency remains unacceptably high, globally, especially among populations most vulnerable to deficiency (children, pregnant and lactating women, adolescents and women of reproductive age). Hidden hunger – the presence of micronutrient deficiencies without a deficit in energy intake – is a critical challenge in urban and rural areas. Food fortification efforts have had greater success in urban areas, due to the presence of infrastructure to support the distribution of fortified products (Lenaerts and Demont, 2021). Globally, an estimated 56 percent of preschool children have one of three core micronutrient deficiencies (iron, zinc or vitamin A), while 69 percent of the women of reproductive age are deficient in at least one of three functional micronutrients (iron, zinc or folate) (Stevens *et al.,* 2022). These core micronutrients affect growth and cognitive development among children as well as functionally impacting women's wellbeing. These impacts are immediate and also have long-term consequences on other health conditions (Darnton-Hill *et al.,* 2005). These global estimates remain consistent even in high-income settings (45 to 50 percent with micronutrient deficiency), where diets are substantially more affordable (Lopes *et al.,* 2023). Similar to the burden of food insecurity, micronutrient deficiency burden is much higher in South Asia and sub-Saharan Africa (62 percent among preschool children and 80 percent among women of reproductive age are deficient in one of three core functional micronutrients). Despite the lack of disaggregated data by urban and rural residence, it is well-established that food insecurity is strongly associated with a higher likelihood of anaemia and micronutrient deficiency. A systematic review and meta-analysis found that women who are food insecure have a higher risk of anaemia, and a surprising finding from this analysis was that even mild and moderate food insecurity elevate the risk of anaemia (Moradi *et al.,* 2018). Generally, women are more vulnerable to these deficiencies due to physiological differences (menstruation, pregnancies) and greater social marginalization; that is, feminization of poverty, higher rates of food insecurity and gendered wage gaps (Lopes *et al.,* 2023; Moradi *et al.,* 2018).

Factors associated with the multiple burdens of malnutrition in households in LMICs include food availability, physiological and psychological factors, including physical activities, dietary patterns and urbanization; socioeconomic factors including poverty, gender and other inequalities; maternal education; maternal and child interrelationship, among others (Bose, Mondal and Sen, 2022).

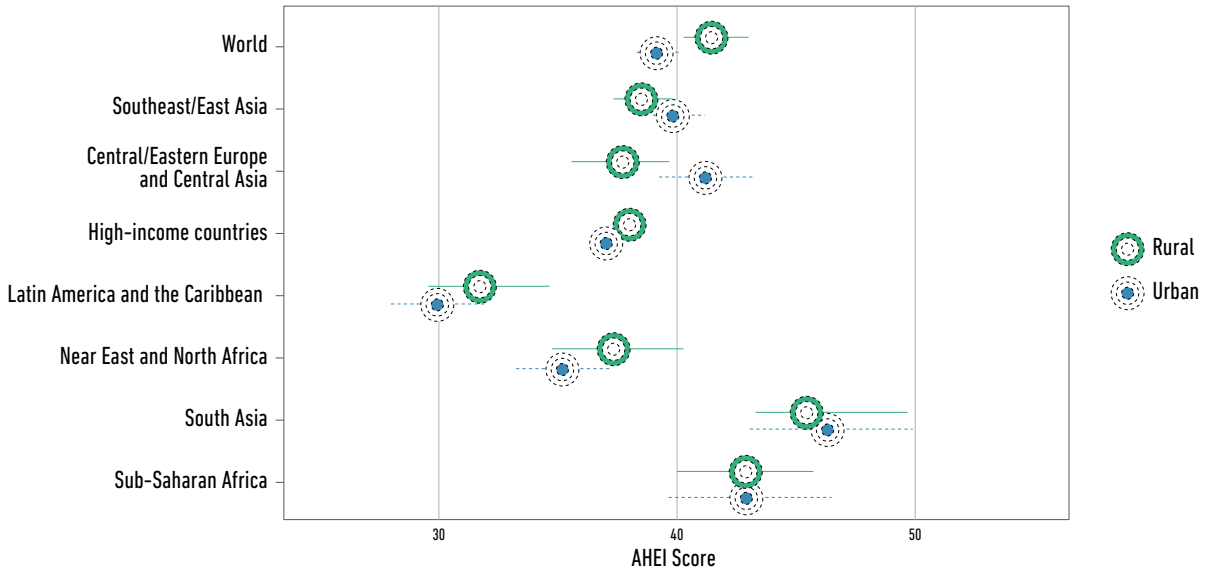
5.3 STATE OF DIETS IN URBAN CONTEXTS

Although U-PU diets differ significantly by income group, geography and income stratification, generally, diets in U-PU settings have become considerably more diverse than in rural settings. However, the diversity of diets has not resulted in better dietary quality (Anand *et al.,* 2015; Tak *et al.,* 2019; Miller *et al.,* 2022; Choithani, Jaleel CP and Rajan, 2023; Ignowski *et al.,* 2023). In fact, **dietary quality is slightly lower in urban areas than in rural areas due to disparities in access to both healthy and unhealthy foods in these spaces, but, overall, with increased availability of unhealthy foods, such as sugary beverages, salty snacks and other calorie-rich options** (Tak *et al.,* 2019; Miller *et al.,* 2022; Marla and Padmaja, 2023).

Dietary quality is a composite of healthy and unhealthy foods associated with diet-related, non-communicable diseases, such as cardiovascular diseases, diabetes and hypertension. Dietary quality is positively associated with more fruit and vegetables, whole grains, legumes/nuts, seafood and polyunsaturated fatty acids (omega-3); and negatively associated with excessive consumption of sugars (including in sweetened beverages), red/processed meat and sodium (Miller *et al.,* 2022). Overall, globally, diet quality remains low (with a median score of 40 out of 100). Figure 15 illustrates the overall dietary quality in 2018 by urban (red circle) and rural (blue) areas, sourced from the global

dietary databases, and Figure 16 shows the consumption of ultra-processed foods by country income levels and urbanicity (Miller *et al.*, 2022). Urban diets have higher intakes of whole grains, sweets and sugary beverages (negative score), red/processed meat (negative score); and lower intakes of legumes and nuts (Miller *et al.*, 2022). Women tend to have higher dietary quality than men due to increased intakes of fruits, non-starchy vegetables and whole grains (Miller *et al.*, 2022). Lastly, regional differences in different components of foods drive dietary quality. In Southeast Asia, higher intakes of whole grains and lower intakes of red/processed meat result in better dietary quality, while sub-Saharan Africa has a higher score due to lower intakes of sweets and sugary beverages, legumes and whole grains (Miller *et al.*, 2022).

FIGURE 15
DIET QUALITY BY REGION AND RURAL/URBAN RESIDENCE, 2018

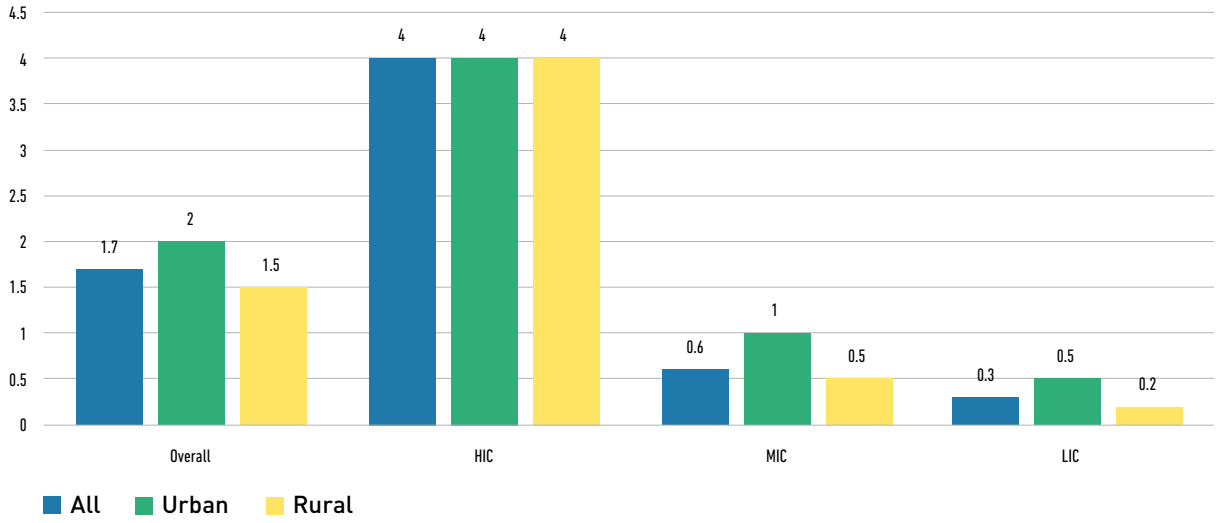


Notes: Dietary quality is expressed according to the Alternative Healthy Eating Index (AHEI).
Source: Miller, V., Webb, P., Cudhea, F., Shi, P., Zhang, J., Reedy, J., Erndt-Marino, J. *et al.* 2022. Global dietary quality in 185 countries from 1990 to 2018 show wide differences by nation, age, education, and urbanicity. *Nature Food,* 3(9): 694–702. https://doi.org/10.1038/s43016-022-00594-9

Urban diets have the advantage of including higher consumption of fruits and vegetables, but they are also typified by more animal-source foods, oils, sugar, salt and ultra-processed foods (Vuong *et al.*, 2023). Higher intakes of vegetable fats (compared to animal fats) due to increased production of oilseeds (such as soybean, sunflower, and palm oil) are a specific dietary transition phenomenon that is unique to LMICs (Popkin, 2003; Pingali, 2007; Tak *et al.*, 2019). Figure 17 shows the diet quality data in 56 countries collected in 2021–2022 on urban/rural differences in dietary diversity, consumption of soft drinks and processed meats. The Global Diet Quality Project provides data on urban vs rural populations at national level, thus enabling national and local policymakers to access disaggregated data to inform governance (SEE BOX 8). Findings show urban/rural differences in many countries, where urban populations tend to have more diverse diets, but also diets associated with increased risk of non-communicable diseases. Knowing where these differences exist, and to what extent, can

shape the health-policy dialogue around urban food environments (Global Diet Quality Project, 2024). Overall, data from modelled estimates (Miller *et al.,* 2022), cohort estimates (urban/rural PURE cohorts), and national sample estimates (Global Diet Quality Project, 2024) corroborate the urban dietary-quality trend that increased access to nutrient-dense foods is offset by increased access to nutrient-poor foods.

FIGURE 16
ULTRA-PROCESSED FOOD CONSUMPTION (SERVINGS/DAY) BY RURAL AND URBAN RESIDENTS AND COUNTRY INCOME LEVEL, 2018



Notes: The World Bank assigns the world's economies to four income groups—low (LIC), lower-middle (LMIC), upper-middle (UMIC), and high income (HIC). The classifications are updated each year on July 1 and are based on the GNI per capita of the previous year.
Source: Dehghan, M., Mente, A., Rangarajan, S., Mohan, V., Swaminathan, S., Avezum, A., Lear, S.A. *et al.* 2023. Ultra-processed foods and mortality: analysis from the Prospective Urban and Rural Epidemiology study. *The American Journal of Clinical Nutrition,* 117(1): 55–63. https://doi.org/10.1016/j.ajcnut.2022.10.014

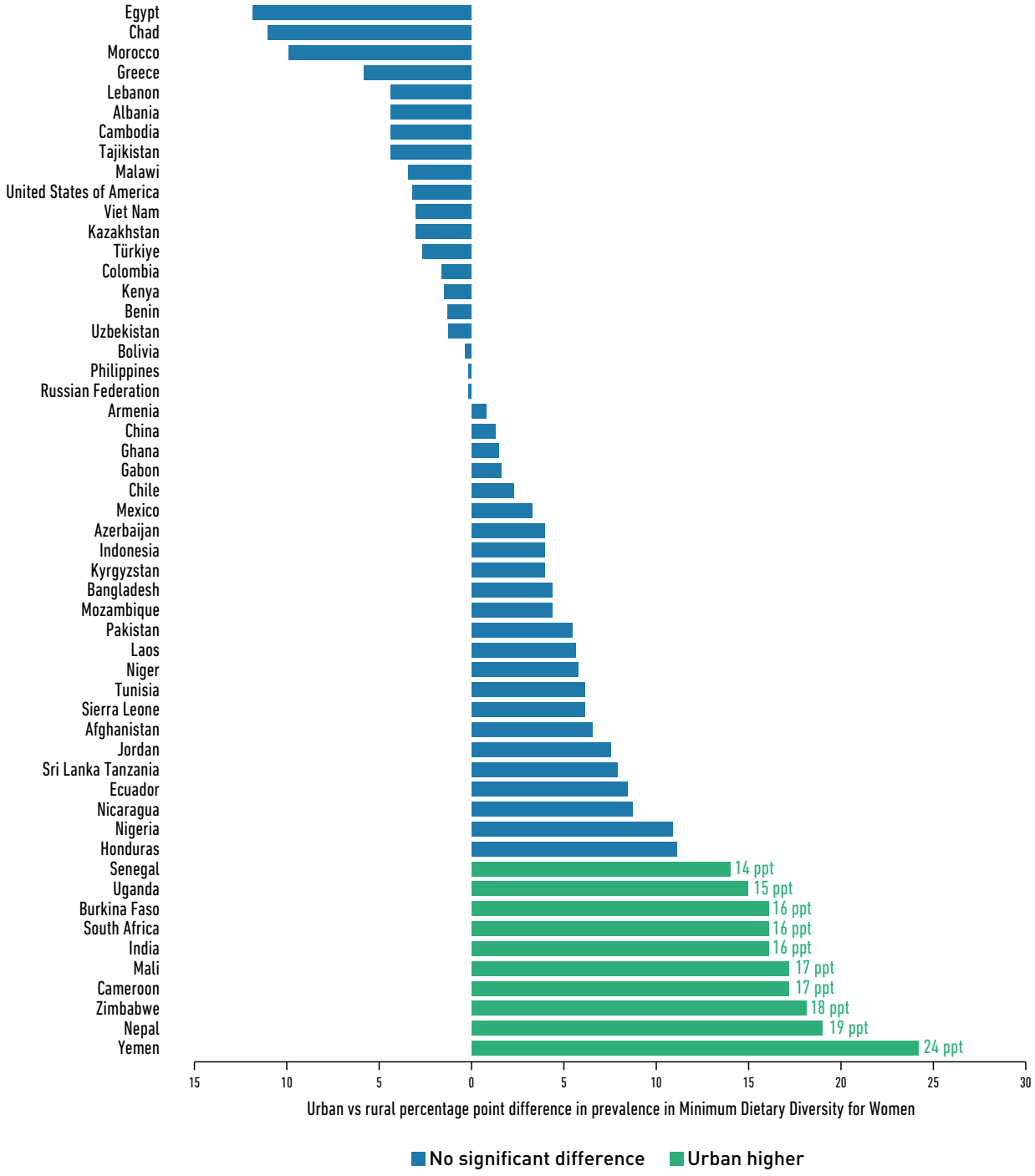
In HICs, dietary intake differs by urbanicity in some countries but not others. For example, while fruit and vegetable consumption does not appear to differ by urban and rural area of residence in Canada (Canadian Risk Factor Atlas, n.d.), rural adults are less likely to meet fruit and vegetable recommendations than urban adults in the United States (Lutfiyya *et al.,* 2012). Data from a prospective urban/rural epidemiology study of 25 countries (and 29 sites; India has five sites) reveals that ultra-processed food intakes are higher in urban areas in LMICs compared to HICs, as shown in Figure 16 (Dehghan *et al.,* 2023).

Cereals constitute a substantial portion of global diets, and the types of cereal consumed vary by urban (imported or local Green Revolution cereals) and rural areas (traditional or coarse grains). In an analysis of four countries (Ethiopia, Kenya, the United Republic of Tanzania and Uganda), Headey and colleagues highlight the dominance of green revolution cereals (maize, wheat and rice) in urban diets, compared to those in rural diets (millet, sorghum and teff) (Headey *et al.,* 2023). Similar observations were found in urban China's dietary transition over time, where there was a shift away from traditional cereals (Popkin, 2003). Many of these urban diets include refined Green-Revolution cereals (cereals that are nutrient-stripped due to a reduction in bran and germ) (Milani *et al.,* 2022). Moseley et al. (2010) provide a useful

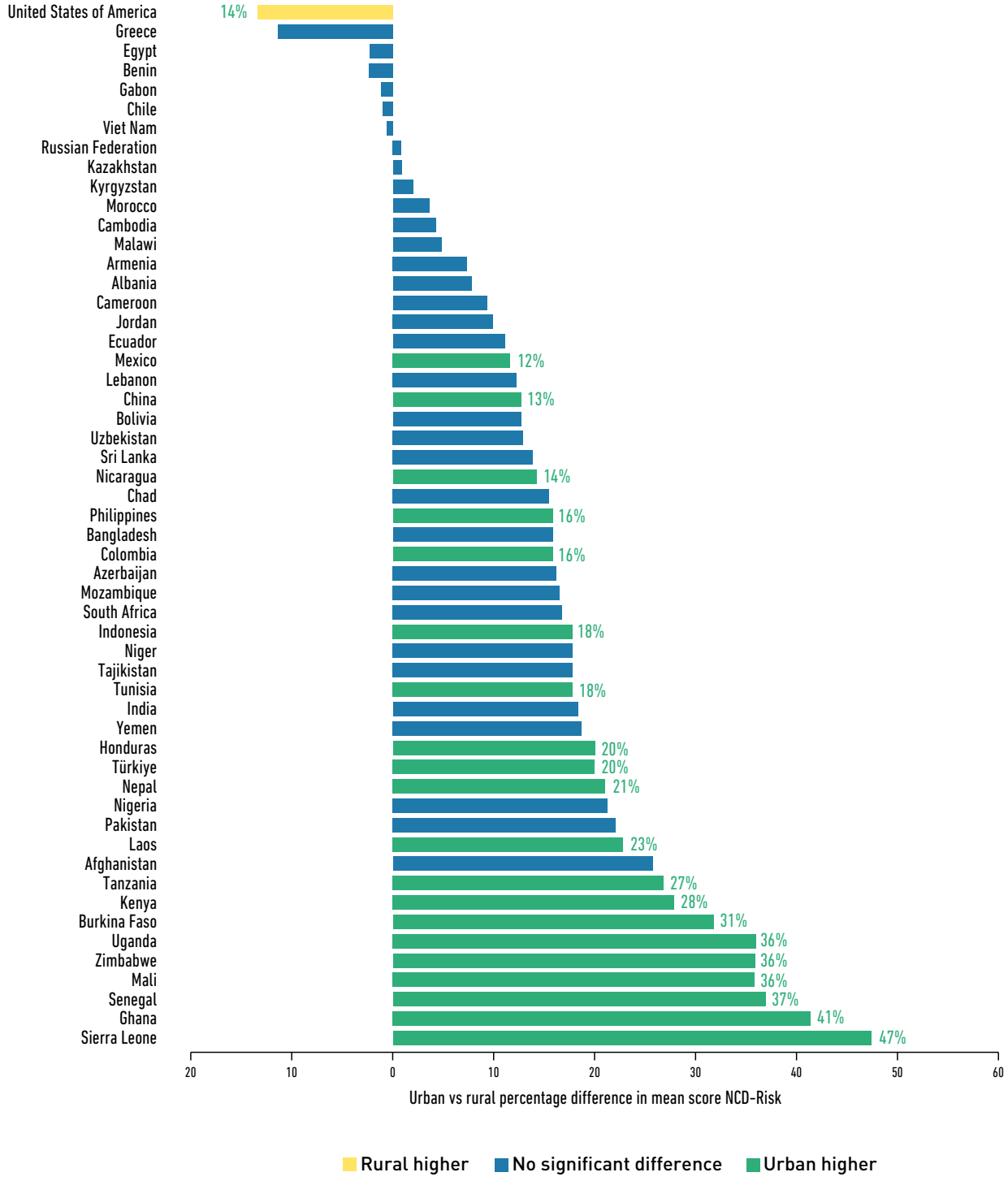
FIGURE 17

URBAN–RURAL DIFFERENCES IN DIET, 2021–2022

A) MINIMUM DIETARY DIVERSITY FOR WOMEN



B) NCD-RISK



Notes: Minimum Dietary Diversity for Women (MDD-W) is a proxy indicator of micronutrient adequacy for women aged15-49 (percentage point (ppt) difference). NCD-Risk is an indicator of dietary risk factors for increased risk of non-communicable diseases (percent difference in mean score). Significant differences are shaded in yellow or green.

Source: Global Diet Quality Project. 2024. G*lobal Diet Quality Project: Enabling diet quality monitoring globally with tools and data.* [Cited 4 March 2024]. https://www.dietquality.org

analysis of the reasons for the shift in from sorghum to imported rice for urban West Africa countries. Introduction of rice varieties had a larger impact on gendered labour in production, and very little investments in transportation and infrastructure limited distribution. Meanwhile, urban demand for rice grew due to labour-saving in terms of cooking preparation (compared to sorghum, plantains, millet which require considerable amount of time and stirring). The urban coastal population who could not access domestic production increasingly relied on imported rice. It is important to note that cereals serve as the primary source of micronutrient adequacy for low-income populations (Bouis, 1999; Becquey *et al.,* 2012). Thus, shifts in the choice of cereal, as well as cereal prices, can significantly impact micronutrient adequacy.

Lastly, as countries urbanize there is increased food consumption away from home. Food away from home (FAFH) refers to prepared meals, snacks and beverages purchased outside the home through formal and informal outlets (Wellard-Cole, Davies and Allman-Farinelli, 2022; Landais *et al.,* 2023).

Many studies focus on the food expenditure related to these foods as a measure of increasing consumption (Wellard-Cole, Davies and Allman-Farinelli, 2022; Landais *et al.,* 2023), as detailed in Chapter 4). A higher percentage of FAFH in HICs is linked to higher intakes of fat, sodium and sugar (Wellard-Cole, Davies and Allman-Farinelli, 2022). In the United States, an estimated 50 percent of food expenditure is for FAFH; in China it is 21 percent of the budget, 39 percent in India and 25 percent in Peru (Landais *et al.,* 2023). In middle-income households of Bangkok, 68 percent of the food budget goes to FAFH, while low-income households in Manila spent 20 percent on FAFH (Mwambi *et al.,* 2023). Two reviews of studies across the Global North and the Global South corroborate the finding that FAFH is a significant source of energy intake, especially fat intake, and is associated with lower diet quality (Wellard-Cole, Davies and Allman-Farinelli, 2022; Landais *et al.,* 2023). The characteristics of younger age, male, higher education and socioeconomic access are associated with consuming FAFH (Landais *et al.,* 2023).

The types of FAFH consumed also differ by income level and affect diet quality. In HICs, higher SES households consume food from restaurants, while lower SES households' source FAFH from fast food venues and carry-outs, which has significant implications for diet quality (Lachat *et al.,* 2012; Wellard-Cole, Davies and Allman-Farinelli, 2022; Landais *et al.,* 2023). For example, the fast-food service sector revolution is one of the most significant contributors to increased (red) meat intake in the United States and is increasingly associated with cardiometabolic diseases. In LMICs, street foods and prepared foods sold by informal vendors are a significant source of prepared meals consumed outside of home. These are often sold by women due to their social role in meal preparation, which has important implications for both livelihood, food and nutrition security (Abrahale *et al.,* 2019; Ashaley-Nikoi and Abbey, 2023).

5.4 FOOD-SAFETY BURDEN

Food safety is a critical component of the utilization dimension of FSN. Poor food safety undermines FSN outcomes for the most vulnerable U-PU populations – the young, old, malnourished, pregnant and immunocompromised (Grace, 2015b). Such is the impact of food safety on FSN outcomes that food-safety advocates have rallied around the statement, "If it's not safe, it's not food" (FAO, 2019b). **Infrastructural challenges in U-PU areas play an important role in shaping food-safety outcomes. Poor water, sanitation and waste management at home and in sites of food-system activities greatly increase food-safety risks.** Globally, 40 percent of the burden of foodborne disease is borne by children, and most is due to fresh foods eaten in informal markets of U-PU areas (WHO, 2015). Diarrhoea has long been associated with child undernutrition, but emerging evidence shows that the presence of enteric pathogens even when asymptomatic , also impact nutritional status (Lee *et al.,* 2013; Kosek *et al.,* 2017; Acosta *et al.,* 2018; Luoma *et al.,* 2023).

Studies have identified a significant increase in diarrhoea cases following the introduction of supplementary foods. Additionally, research indicates that foods that children are weaned onto often contain high levels of microbial contamination and adulteration (Kumi *et al.,* 2014). Ingestion of animal faecal material through food or from the environment may contribute to environmental enteric dysfunction (George *et al.,* 2015).

Another issue is that perceptions of food safety have been shown to affect the consumption of nutrient-rich foods such as dairy, meat, fruits and vegetables (Nago *et al.,* 2012; Turner *et al.,* 2018; Wertheim-Heck, Raneri and Oosterveer, 2019; Patil, 2020; Liguori *et al.,* 2022; Isanovic *et al.,* 2023). Such food scares and fears (whether true or not) can divert people away from healthy food choices towards more processed foods, which are generally energy dense and nutrient poor.

In LMIC contexts, there is often a trade-off between food safety and availability. Measures intended to improve the safety of food can have the unintended consequence of reducing its availability. For example, in Kenya, the cost of pasteurized milk is double that of raw milk, placing it beyond the means of many poor families. A study on aflatoxin in Kenya found that if existing standards were strictly enforced, enormous amounts of staple foods would have to be destroyed, which would be economically and practically infeasible (Sirma *et al.,* 2018).

5.5 CONCLUSION

Over three-quarters of people in the world experiencing moderate or severe food insecurity live in U-PU areas. Urban populations generally have higher rates of overweight, obesity and diet-related noncommunicable diseases than rural populations, due to higher consumption of animal-source foods, fruits and vegetables, oils, sugar, salt and ultra-processed foods. Within urban areas, food insecurity concentrates in slums and low-income peripheral areas. These areas should, therefore, be areas of data monitoring and particular policy and programming attention. An additional factor in U-PU areas is that poor food safety undermines FSN outcomes for the most vulnerable U-PU populations. As indicated in the report's theory of change, improving these FSN outcomes depends on addressing their complex, interacting drivers. Chapter 6 provides a discussion of the governance entry points required to enable the systemic transitions that are needed.

CHAPTER 6

GOVERNING URBAN FOOD SYSTEMS: MULTILEVEL AND MULTI-ACTOR PROCESSES

Food delivery rider in London, United Kingdom of Great Britain and Northern Ireland, 2021. The rapidly evolving "gig economy" now accounts for over a tenth of the global labour market and is disrupting the use of urban space (e.g. empty office buildings), concentrating inequity (for instance, with low social protection for "gig economy" workers).

KEY MESSAGES

- Due to the complex nature of U-PU food systems, it is essential to work through multilevel, multilateral and multi-actor governance processes within and beyond the state.
- This requires understanding the actual powers of local governments, inclusive of the degree of decentralization, mandates, finances and capacities, as well as their relationships to other levels of government, to the private sector and to civil society.
- Cities are already acting as food-policy innovators and are engaging in translocal networks to increase the voice of urban government in global and regional food policy.
- To ensure that multi-actor governance is genuinely inclusive, care should be taken to avoid reinforcing power asymmetries in multi-actor platforms (often termed multistakeholder platforms).

6.1 INTRODUCTION

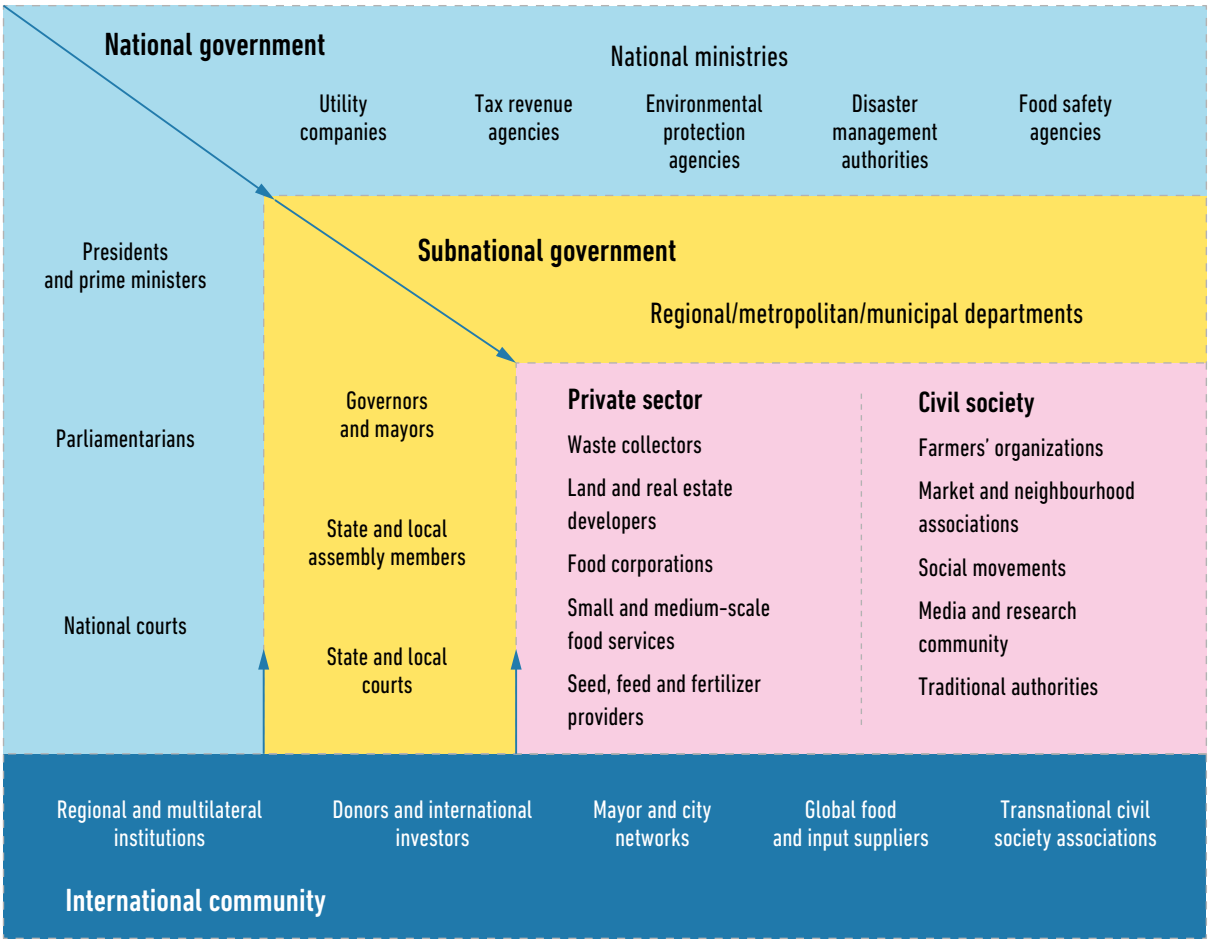
Cities are embedded in multilevel, multilateral and multi-actor structures influenced by the actions of both formal- and informal-sector stakeholders, and by cross-scalar and transnational relationships. This is true for any system and sector, but is even more evident in food systems. As seen in Figure 18, the range of government and governance stakeholders is extremely diverse, as urban governments are embedded within, and engage with, a diverse set of national politicians, agencies and ministries with some responsibility for U-PU food systems. At the same time, private-sector and civil-society entities play a fundamental role in implementing activities that can improve or hinder urban food security. Collectively, these actors are all operating within a broader international community whereby transnational linkages, financial flows, corporate power and multilateral bodies influence the menu of food policy options that can be pursued in the urban milieu.

As established in chapters 2 and 5, FSN outcomes are shaped by food-system dynamics, but also by the interaction of the food system with other systems. While Figure 18 focuses on the diversity of actors to be engaged in food-system governance, **it is important to consider the linkages between the food system and other systems, including health, education, planning and economic, *inter alia*. Working across these various systems requires an understanding of the politics, synergies and trade-offs between actors working towards different intended outcomes.**

Consequently, policymaking and implementation involves not only traditional challenges of coordination across government institutions but also collaboration with various networks inside and outside government (Peters and Pierre, 2012). Actions for strengthening urban food systems require engaging with all these actors, levels and sectors to enhance synergies and minimize trade-offs across policies, programmes, investments and planning. Importantly, these dimensions of governance can be strongly influenced by political-economy dynamics that shape incentives, reflect partisanship and align with electoral cycles (Resnick and Swinnen, 2023a). In this complex governance context, **it is necessary to understand what functions cities have, how they vary across geographies, and what opportunities exist to enhance their powers to strengthen urban food systems.**

Currently, cities are widely regarded as key players in addressing extant environmental, socioeconomic and health crises (Nijman and Wei, 2020; Hebinck *et al.*, 2021; Nature Editorial Board, 2023) and are seen as having substantial power to transform food systems. However, the institutional and political contexts in which cities must manage food systems vary immensely. As

FIGURE 18
MULTILEVEL GOVERNANCE ACTORS RELEVANT TO URBAN AND PERI-URBAN FOOD SYSTEMS



Notes: The arrows indicate the interrelationships across levels while the dashed lines convey that the boundaries between these spaces are porous.
Source: Authors' own elaboration.

such, this chapter first explores the competencies and authoritative functions delegated to cities and the capabilities and incentives for cities to deliver on those functions (Morrison *et al.*, 2019). In turn, the chapter highlights important efforts in urban-governance innovations in food systems and provides a nuanced assessment of their strengths and weaknesses.

6.2 INSTITUTIONAL CONTEXT OF URBAN FOOD GOVERNANCE

Decentralization affects the role, competencies and power of cities. The competencies and authoritative powers of city governments over legislation, taxation, resource distribution and policy design, differ according to overall levels of decentralization, which can vary by sector. For example, many cities have a mandate over managing municipal markets or waste collection, but far fewer have control over disaster management caused by environmental or health emergencies. This section examines **two key dimensions that shape differential competencies and authoritative powers: the degree and sequencing of decentralization and the distribution of mandates for food systems between government tiers and across jurisdictions.**

6.2.1 NATURE OF DECENTRALIZATION

Decentralization, which involves the transfer of fiscal, political and administrative responsibilities and powers to subnational tiers, **has been one of the most fundamental shifts in governance structures over the last several decades and has contributed to the growing influence of cities.** This is important as it endows local governments with additional capacity and authority to act.

The sequencing of decentralization partially accounts for the degree to which cities have authority to make decisions about food security and food systems. In Africa, for instance, political decentralization – the election of local leaders and mayors – has proceeded ahead of administrative and fiscal decentralization (UN-Habitat, 2010; Riedl and Dickovick, 2014; Resnick, 2021). Consequently, African cities rarely have sufficient power to autonomously implement needed reforms, decisions about urban issues are often made at the ministerial level, and funding for local projects requires approval from the central government (Slater and Crispin, 2022). By contrast, city governments in Latin America are relatively strong. In that region, the disappearance of military regimes in the 1980s coincided with the emergence of "municipalization" and a growing support of local government. In countries such as Brazil, the post-military constitution also mandated the devolution of numerous powers and responsibilities to municipalities, a process that was seen to have encouraged participatory, inclusive decision-making processes (Chappell, 2018) (which became characteristic of food-policy bodies). The dimensions of political autonomy are even more complex when considered in conjunction with other tiers of power and governance. For example, local government representatives in Indonesia are not subordinated by provincial authorities, a situation which contrasts to that of India and the Philippines, where provincial governments hold greater powers (OECD/UCLG, 2016). There are also variations in functions across cities in the same country depending on their size (Kumar and Stenberg, 2022).

6.2.2 (MIS)MATCHED MANDATES OVER ENTRY POINTS TO STRENGTHEN URBAN FOOD SYSTEMS

Cities often have mandates over key areas that are central to strengthening urban food systems, inclusive of waste management, market management, land-use titling and local infrastructure. By 2008, more than 80 percent of Latin American countries required local governments to manage urban water and sanitation systems on their own or concurrently with higher tiers (Post, 2018). However, local governments rarely have authority over food-safety policy, which is typically formulated at the national level, and which may be implemented concurrently by both national and local officials. Moreover, countries vary in the degree to which agricultural, health or other sectoral programmes are decentralized to provincial, state, county and local levels (Romero A, Jaffe and Kumar, 2023). Cities almost never have authority over industrial policy or large-scale infrastructure investments (Wachsmuth, Cohen and Angelo, 2016), which have important impacts on agro-processing and transport linkages. However, in many places, local authorities do have considerable autonomy over spatial planning and zoning, which can affect the location of markets and agricultural lands, and the broader access, availability and affordability of nutritious foods.

Mismatches can often occur when sectoral or programme mandates are divided. In the United States, some elements of food systems, such as those related to natural resource management (agricultural production practices), social welfare programmes (food assistance benefits and school nutrition programmes) or transportation are often regulated and funded by the federal government, but administered by state governments. **There is much that local government can do to address food-system challenges, but the layering of authority constricts their power** (Bassarab, Santo and Palmer, 2022).

Identifying coordinated mechanisms at the municipal and national levels to bring together relevant departments and ministries

overseeing a portion of urban food systems is critical. It is necessary to map where food is (and where it can be) and to establish mechanisms that ensure coordination within the local administration and between local administration and national levels, as well as to push for all relevant departments to engage with the urban food agenda. Given the increase of policy goals that require coordinated and transversal action across departments, such as climate change, social justice and health, it is paramount to fund a dedicated food team that, among other functions, ensures the coherence of public urban food interventions. Box 9 provides an example from Cape Town, South Africa that highlights the fact that cross-departmental coordination requires concerted effort within local government to develop a shared understanding of mandates and to build a platform for future action.

BOX 9

MAPPING MANDATES IN CAPE TOWN, SOUTH AFRICA

Cape Town's Resilience Strategy (2019) highlighted food insecurity as a significant vulnerability and included action to establish a food-systems programme. Improving resilience requires a systems approach. Therefore, it is necessary to understand how a system responds during shocks and chronic stresses and to consider that different responses and role players are needed according to the issue to be addressed.

The South African government views food security primarily as a production issue, and therefore, not as a local government mandate. However, food-systems analysis concluded that, in Cape Town, food access is the dominant issue, rather than supply A mandate-mapping exercise of food intersections with local government mandates uncovered over 40 activities across 9 departments, including health, environmental health, economic development, spatial planning and waste management. A city-led food-systems working group of internal and external role players provides a transversal platform for coordination, knowledge-building and food systems promotion. Themes have included informal trade, agri-hubs, humanitarian relief and food-sensitive planning, among others.

The food-systems programme is led by the City of Cape Town's Risk and Resilience Department, and largely consolidates existing activities, with nominal additional activities primarily focused on governance and reporting.

Source: Authors' own elaboration based on: City of Cape Town. 2019. *Cape Town Resilience Strategy*. Cape Town. https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies%2C%20plans%20and%20frameworks/Resilience_Strategy.pdf

Several areas critical to strengthening urban food systems require coordination across municipal jurisdictions, especially on policies that generate externalities or where inequities in access need to be mitigated (Kubler and Pagano, 2012). Solid waste management, watershed management and mass public transportation, for instance, are all relevant to enhancing access to safe food, but may be controlled by different municipal governments in a particular urban agglomeration. This necessarily requires strengthening coordination among metropolitan-wide institutions (Weir, Rongerude and Ansell, 2009), which is a task that becomes more complex depending on the size of each municipal administration and the

number of cities included in a metropolitan locale or multicity agglomeration.

Beyond coordinated, urban food units within local government and across metropolitan areas, **mechanisms for alignment across levels of government are equally essential to ensure policy coherence and effective resource use.** UN-Habitat's document, Integrating Sustainable Food Systems into National and Sub-National Urban Policies, provides extensive guidance on developing multilevel governance mechanisms (UN-Habitat, 2023) Such mechanisms can take many forms. For example, Lima, Peru has established a multistakeholder food system council of metropolitan Lima (called CONSIAL) and at the same time, signed an agreement with other Peruvian municipalities to strengthen agrifood systems (FAO *et al.,* 2023a). In Spain, the Barcelona City Council and the Catalan (regional) government have created a joint Sustainable Food Office to coordinate policies, programmes and interventions. In the Kingdom of the Netherlands, the Dutch City Deal: Food on the Urban Agenda, brings together 12 local governments, one province and several national ministries (Sibbing, Candel and Termeer, 2021). This multilevel arrangement aims to establish a platform for knowledge exchange, learning and collaboration and to explore the governments' role in developing more interactive and integrated governance approaches in the realm of food policy (Citydeal Voedsel op de Stedelijke Agenda, 2017). Box 10 illustrates similar efforts in Brazil.

BOX 10

INTEGRATED MECHANISMS FOR MULTILEVEL GOVERNANCE IN BRAZIL

Brazil has long been a leader in efforts to uphold the right to food and ensure greater cross-sectoral and multilevel governance around food policy. Since 2006, Brazil has had a law establishing a national food and nutrition security system (SISAN). SISAN has two pillars, one of articulation between government sectors and the other of social participation. At the federal level, these are expressed by the Interministerial Chamber (CAISAN) and the National Council (CONSEA), respectively. CAISAN is currently made up of 24 ministries. Among other roles, CAISAN coordinates the execution of and monitors food and nutrition security policies and plans across ministries, such as the Brazil Without Hunger Plan. CAISAN also supports the intersectoral chambers of the Brazilian states in preparing their respective plans by establishing forums for dialogue. The national plan is drawn up based on the decisions of the National Conference on Food and Nutritional Security, held every 4 years by CONSEA. CONSEA is the advisory body of the office of the presidency, bringing together civil society and government actors. In 2023, during the National Conference, the president of the republic signed a decree launching Brazil's Strategy for Food and Nutrition Security in Cities – Feeding Cities (Alimenta Cidades, in Portuguese). This strategy aims to support healthy food environments, urban agriculture and territorial markets, to reduce food loss and waste, to provide food and nutrition education and communication, and to improve the availability of healthy foods in public and private supply facilities, prioritizing communities in situations of greater vulnerability.

Several cities also have interdepartmental mechanisms to enhance food security. For instance, since 1993, Belo Horizonte has a Municipal Secretary of Food Supply, Security and Nutrition (SMASAN) to implement the city's food security programme. SMASAN's advisory boards include civil society, municipal departments and food businesses. Since its establishment, SMASAN has overseen more than a hundred different types of outlets that ensure that food supply, distribution and demand are met at affordable prices. This includes the creation of low-priced restaurants, especially in poor neighbourhoods, offering nutritious food at affordable prices; permanent markets;

food stores offering fresh produce at prices set by SMASAN; and open-air markets where farmers can sell their produce. In 2015, an amendment to the city's master plan integrated urban agriculture.

In 2015, the mayor of São Paulo signed a decree creating a food and nutrition security coordination unit (called COSAN), which is responsible for the Municipal Plan for Food and Nutrition Security and for ensuring that the importance of food security issues are incorporated into the Municipal Master Plan. Among other goals, COSAN aims to promote food and nutrition security among economic and socially vulnerable populations and to improve their employment and entrepreneurship opportunities. It coordinates two types of operations: the city's food bank programme and its programme to combat food waste and loss.

Source: Authors' own elaboration, based on: Rocha, C. and Lessa, I. 2009. Urban Governance for Food Security: The Alternative Food System in Belo Horizonte, Brazil. *International Planning Studies,* 14(4): 389–400. https://doi.org/10.1080/13563471003642787; Chappell, M.J. 2018. *Beginning to end hunger: food and the environment in Belo Horizonte, Brazil, and beyond.* Oakland, California, University of California Press; Delgado, C. 2018. Integrating food distribution and food accessibility into municipal planning: Achievements and challenges of a Brazilian metropolis, Belo Horizonte. In: Y. Cabannes and C. Marocchino, eds. *Integrating Food into Urban Planning.* pp. 209–228. London, UCL Press https://doi.org/10.2307/j.ctv513dv1.17; Halliday, J., Platenkamp, L. and Nicolarea, Y. 2019. *A menu of actions to shape urban food environments for improved nutrition.* GAIN, MUFPP and RUAF. https://www.gainhealth.org/sites/default/files/publications/documents/gain-mufpp-ruaf-a-menu-of-actions-to-shape-urban-food-environments-for-improved-nutrition-october-2019.pdf; Government of Brazil, 2023.

6.3 MOBILIZING RESOURCES, PARTNERS AND INCENTIVES TO GOVERN FOOD SYSTEMS

Beyond designated functions and mandates, **other important dimensions to urban food-system governance include the capabilities of urban politicians, bureaucrats and other officials to identify and monitor policy priorities, raise finances to pursue those priorities, and ensure effective implementation of needed actions** (Abers and Keck, 2013; Morrison *et al.,* 2019). When such capabilities are weak or uneven, some of these responsibilities may be bolstered by outsourcing to, or partnering with, non-state actors. Strengthening these capabilities and partnerships relies on understanding the underlying incentive structures and political-economy dynamics.

6.3.1 FISCAL AND HUMAN-RESOURCE CAPACITIES

City councils naturally have different capacities due to availability of budget, skills and knowledge to implement policies and regulations (Vara-Sánchez *et al.,* 2021). Combined with economic development and decentralization trajectories, **the ownership and availability of different subnational resources is critical for identifying adequate pathways to strengthen food systems.**

Fiscally, cities have access to different types of finance for urban food systems, including intergovernmental transfers, own-sourced tax revenue, grants from development partners, public-private partnerships, and different debt instruments (Tefft *et al.,* 2021). There are advantages and disadvantages to these different instruments. For instance, own-sourced revenue provides more autonomy but often fewer resources in absolute terms. By contrast, intergovernmental transfers are often larger in absolute terms but make local authorities beholden to potential shifts in transfer rules by the national government, which affect budgeting. Where urban areas are more reliant on intergovernmental transfers than own-sourced revenue, there is the possibility of reducing or blocking resource transfers when cities are governed by opposition parties, a situation known as vertically divided authority (Cameron, 2014; Lambright, 2014; Resnick, 2014; Cheeseman and de Gramont, 2017).

There are wide variations across the world in the share of available subnational financing to strengthen food systems. These differences help explain why in some cities, leaders may be more progressive than their national counterparts in promoting innovative, sustainable food strategies while in other settings, urban leaders lack the resources, autonomy or capacities to act independently (Adelina *et al.,* 2020). In the latter case, cities may pursue their food system goals under a nationally-led urban food programme with transfers from the central government (Tefft *et al.,* 2021).

Tax mobilization is a particularly double-edged challenge since it may provide resources for investments in some critical elements of the food system, such as infrastructure and services, while increasing costs to private food operators, possibly resulting in consumer-price increases. However, if carefully designed, it can discourage unhealthy and unsustainable food activities, from production to consumption (SEE CHAPTER 7). For instance, in Nigeria, logistics operators note that the range of taxes for haulage, loading, parking and unloading produce can increase the costs of food by as much as 15 percent (Orjinmo, 2023). In Kenya, multiple agricultural taxation rates (known as agriculture cess) across counties, and variations in how they are levied across commodities (for instance, per truck tonnage or per unit), is widely viewed as a reason why traders and transporters need to mark-up the costs of food when it reaches urban consumer markets (Resnick *et al.,* 2022). On another note, the academic literature shows the health benefits of taxing foods high in sugar, salt and fat (Popkin *et al.,* 2021), including evidence from five US cities where the consumption of sugar-sweetened beverages dropped by 33 percent after tax implementation (Kaplan *et al.,* 2024).

Limited human resources are cross-cutting constraints for managing the impacts of urbanization on food security. For example, one study in 16 African cities and local governments revealed that local government administrations have management staff ratios of 1.4 per 1 000 inhabitants, compared with 36 per 1 000 inhabitants in HICs (Cities Alliance, 2017). Low pay, insufficient office infrastructure, political interference and inadequate skills to address complex systems issues are additional concerns in low-income local bureaucracies (Resnick and Siame, 2023). Secondary cities and fragile cities in fragile states can be even more limited in terms of capacity and financial resources. For instance, while 60 percent of urban Indians live in cities of 500 000 people or fewer, surveys show that elected local councillors in such secondary cities have a severe lack of procedural knowledge; that is, basic information about how to pass a budget, levy certain taxes and user fees, file complaints and move resolutions, exercise oversight and approve new construction and development in their boundaries (Auerbach, Singh and Thachil, 2023). By contrast, larger cities are associated with more competent employees and are more likely to have a more diversified tax base (Kumar and Stenberg, 2022). Collectively, this suggests that **priorities for strengthening urban food systems will need to be carefully tailored to these variations in fiscal and personnel capacity in order to be effectively implemented.**

6.3.2 PARTNERSHIPS WITH NON-STATE ACTORS

Due either to weak capacities or to the desire to be inclusive of other skills and expertise, many cities rely on partnerships with the private sector, community organizations and local citizens. In fact, urban residents are often important partners in the development and implementation of urban food policies and in grassroots initiatives, such as urban gardens and surplus food redistribution. Some places have an active and engaged civil society working on food issues that delivers services and programmes to their communities and are involved in policymaking, while in other places, activities are mostly led by the local government (Moragues-Faus and Morgan, 2015) (SEE EXAMPLES IN BOX 11).

A wide diversity of actors is engaged not only in delivering specific projects and programmes but in providing key infrastructure and services to deliver food-security outcomes. When

BOX 11
THE DIVERSE ROLES OF THE STATE AND CIVIL SOCIETY IN URBAN FOOD GOVERNANCE

The modalities of urban food governance vary significantly across cities. For instance, in the UK city of Bristol, the urban food agenda has been shaped by a vibrant civil society engaging with the local government in an austerity context. In 2007, Bristol's green civil society created the Bristol Food Network, a self-organized initiative designed to link individuals, community projects, organizations and businesses that share a vision to transform Bristol's food system. The network developed a participatory process that resulted in a civil-society-led Sustainable Food Strategy for Bristol (2009). In 2011, the Bristol Food Policy Council was launched with the participation of the city council, the public health team and the Bristol Food Network, among others. The election of a new mayor in 2016 led to placing greater emphasis on equality and inclusion in Bristol's food agenda, and resulted in support from the Council for the city to run for a Sustainable Food Places Gold Award. This new pursuit resulted in creating a new formal governance platform – Going For Gold – which included in the steering group the Bristol Food Network, the Bristol Green Capital Partnership and the Bristol City Council. In this process, the Bristol Food Policy Council became dormant. After the city received the Gold Award, in July 2021, the Going For Gold Steering group reconfigured into the Bristol Good Food 2030 Partnership, which helps bring collaborations across the city and has diverse organizations in its steering group, including four Bristol City Council departments, the Bristol Food Network, the Bristol Green Capital Partnership, Feeding Bristol, Bristol Food Producers, Bricks Bristol and Ambition Lawrence Weston. Bristol's journey shows the capacity to adapt the structure of food governance platforms and the key role of civil society and community organizations in providing resilience to food-system transformation processes.

Another example is the city of Malmö (Sweden), which is world-renowned for its ambitious environmental and climate policies. In 2010, Malmö developed a policy for sustainable development and food as part of the transition towards a climate-neutral administration. Building on Sweden's social democratic welfare state, the local government plays a key role in developing policies and actions to achieve different social and environmental goals. The main goal of Malmö's urban food policy was that all food purchased by the municipality should be organic by 2020 and that greenhouse gas emissions from food procurement should be reduced by 40 percent by 2020, compared with the 2002 level. In 2021, over 70 percent of the meals served were organic. The city has also reduced its greenhouse gas emissions by 30 percent, to 1.49 kg CO2 e/kg of purchased food (Klammeus, 2021). As part of the policy development, there were broad consultations with different stakeholders. In addition, the municipality is also supporting other sustainable food initiatives that are emerging, including the Urban Gardening Network.

The city of Antananarivo (Madagascar) created an urban agriculture programme in 2011 to promote the installation of gardens and create income-generating activities. To upscale the initiative and ensure sufficient human and economic resources for the programme, the city council set up a platform to engage external actors. In 2016, the Antananarivo Food Policy Council was created, driven largely by the deputy mayor but drawing on over 20 stakeholders involved in the urban agriculture programme. In addition, in 2020, the city developed a mobile application called Maboly Aho ("I Farm"), which provides a platform for urban farmers to share information about best practices for urban agriculture cultivation as well as information about waste management.

Source: Authors' own elaboration based on: Moragues-Faus, A. and Morgan, K. 2015. Reframing the foodscape: the emergent world of urban food policy. *Environment and Planning A: Economy and Space,* 47(7): 1558–1573. https://doi.org/10.1177/0308518X15595754; Andrianarisoa, O., Zuleta Ferrari, C., Currie, P. and Coetzee, I. 2019. Antananarivo Food Policy Council: Policy as practice. *Urban Agriculture magazine*, 36. [Cited 19 October 2023]. https://ruaf.org/assets/2019/11/Urban-Agriculture-Magazine-no.-36-Food-Policy-Councils.pdf; UN-Habitat. 2021. *Building resilience in the City food system of Antananarivo through adapted production systems.* [Cited 27 February 2024]. https://www.urbanagendaplatform.org/best-practice/building-resilience-city-food-system-antananarivo-through-adapted-production-systems; Halliday, J. 2022. Beyond Gold: Bristol's ever-evolving food governance journey. *Urban Agriculture magazine,* 38: 110–111.; Haysom, G. & Currie, P. 2023. Food Policy Councils and Governance Partnerships in African Urban Contexts. In: A. Moragues-Faus, J. Battersby, J.K. Clark & A. Davies, eds. *Routledge Handbook of Urban Food Governance.* pp. 196–209. London, Routledge.

considering the provision of services, many common ones, such as waste management, transport, water services and market management, may be outsourced to private sector actors (Harman, Taylor and Lane, 2015). While urban residents in HICs rely on piped and treated water from centralized utility-run water systems, city-dwellers in LMICs often depend on a patchwork collection of state and non-state actors to provide water (Post and Ray, 2020), with residents in lower-income areas often paying more in absolute terms than higher-income residents. Similarly, municipal, corporate and informal actors may have a mandate over waste management in different areas of the city, leading to uneven collection and risks to food safety within marketplaces. In some cities, urban rejuvenation and redesign of the built environment, including market spaces, has involved heavy investments from international NGOs or donors (El-Kazaz, 2020).

6.3.3 POLITICAL ECONOMY OF INFORMALITY IN URBAN AND PERI-URBAN FOOD SYSTEMS

One concern regarding the provision of urban services and investments through hybrid channels – state and non-state, formal and informal, national and local – is that it undermines accountability to citizens for their food-system outcomes. The more such hybridity prevails, the greater the likelihood for the emergence of rent-seeking and cartel-type structures that particularly disadvantage the urban poor and weaken the availability of services and of enabling conditions for healthy, accessible food systems (Katsaura, 2012; Haysom and Currie, 2023). For instance, the growth of slums in LMIC contexts is sometimes linked to complex social and political relationships embodied in clientelist behaviours, or the exchange of public benefits for political support. In particular, local politicians provide land and private services for slum housing in exchange for political support. In turn, this disincentivizes both politicians and the poor from pushing for more formal urban planning efforts (Deuskar, 2023). Similarly, poor water management and growing pressure on water systems due to climate change have led to the emergence of "water mafias" in cities like Karachi (Pakistan), Bangalore and Delhi (India), Accra (Ghana), and Kisumu (Kenya) (Ranganathan, 2016; Tutu and Stoler, 2016; Boakye-Ansah, Schwartz and Zwarteveen, 2019). These mafias are private water-tanker providers with close linkages to politicians and bureaucrats who can manipulate prices during times of scarcity and provide free water during electoral periods.

The political economy of interacting with informal food vendors and market traders in cities of the LMICs is particularly complex. In some cases, local and national governments use tactics of repression through the physical removal of such traders or criminalization of their activities (Roever and Skinner, 2016; Resnick 2019). Such responses are sometimes justified by blaming traders for violation of public-space regulations or as a source of disease outbreaks, such as cholera. During COVID-19, crackdowns on food traders were especially common, despite their importance to the food security of the urban poor (Kiaka et al. 2021; Béné *et al.,* 2021a, 2021b). In several cases, such draconian approaches have been found not only to increase the vulnerability of those working in the informal food sector but also, ironically, to worsen food safety (Roesel and Grace, 2015; Grace, Dipeolu and Alonso, 2019; Blackmore *et al.,* 2022).

In other cases, traders are exposed to high levels of surveillance, such as in Lusaka's markets where party-affiliated cartels historically have controlled stall allocations and fee payments (Beardsworth *et al.,* 2021). In others, benign neglect prevails as market operators are able to operate unmolested but often lack the requisite infrastructure, such as sanitation facilities, waste collection and electricity, to operate safe and profitable businesses (Resnick et al. 2022), Yet another tactic used by politicians with informal traders is forbearance; that is, ignoring abuses of the law as a way of winning votes when elections are on the horizon (Holland, 2016).

Importantly, multiple and illegal taxes levied by informal actors on the urban poor lead to the

diversion of much-needed revenue away from city and town councils, further undermining their ability to deliver the goods and services needed for quality food. As a result, there is a growing interest on the part of national and urban governments in expanding mobile and e-payment systems to reduce the interference of non-state actors in revenue collection. Yet, as detailed in Box 12, there are several concerns regarding this approach.

BOX 12

TAXING TRADERS IN URBAN AFRICA: GENERATING REVENUE OR UNDERMINING EQUITY?

Traditional and wet markets are often among the main sources of revenue for urban governments in many African cities. Many traders operating in such settings face a variety of different fees they must pay to various entities and, in the wake of the pandemic, are encountering even more efforts to tax them as local governments try to recoup lost revenue. Local governments often rely on digital financial services, and specifically taxing money transfers and mobile money. Traders have increasingly relied on mobile transactions when selling to customers or buying from wholesalers, a move that was encouraged during the pandemic when cash transactions were seen as unsafe.

For instance, in May 2022, Ghana introduced a 1.75 percent electronic transfer levy on those in the informal economy earning USD 8.80/day or higher. In July 2023, the Nigerian government announced it had partnered with the Market Traders Association of Nigeria to gather and remit value added tax from its members using a digital platform. Tanzania and Cameroon have also introduced mobile money taxes since COVID-19, following examples in Côte d'Ivoire, the Congo, Kenya, Uganda, and Zimbabwe.

Proponents say that the taxes enable local governments to gain revenue to provide necessary services to the communities they serve, as well as providing transparency, since they are collected through the telecoms and mobile transfer businesses rather than through poorly trained and sometimes corrupt public-sector revenue agents. Opponents claim such that taxes are regressive, with the poorest in the informal economy paying the most, and that such moves contradict efforts to improve the financial inclusion of informal-sector workers.

Ensuring that associations of traders are consulted in advance of such decisions is important to their buy-in and to show willingness on the part of local governments to find a tax rate and modality that is both equitable and revenue generating. Moreover, local governments must simultaneously work to improve the collection of property taxes, which are viewed as a fairer and more efficient form of taxation. In many cities, these are currently suboptimally collected due to incomplete land and property cadastres, inappropriate valuation methods and poor technical capacity to implement.

Source: Collier, P., Glaeser, E., Venables, A., Blake, M. & Manwaring, P. 2017. *Land and property taxes for municipal finance.* International Growth Centre, London. https://www.theigc.org/publications/land-and-property-taxes-municipal-finance; Clifford, K. 2020. *The causes and consequences of mobile money taxation An examination of mobile money transaction taxes in sub-Saharan Africa.* London, GSMA; UNCDF (United Nations Capital Development Fund). 2021. *The Impact of Mobile Money Taxation in Uganda.* New York; Anyidoho, N.A., Gallien, M., Rogan, M. & van den Boogaard, V. 2023. Mobile money taxation and informal workers: Evidence from Ghana's E-levy. *Development Policy Review,* 41(5): e12704. https://doi.org/10.1111/dpr.12704; Dzirutwe, M. 2023. Nigeria targets millions of informal traders to boost tax. *Reuters,* 3 July 2023. [Cited 6 October 2023]. https://www.reuters.com/world/africa/nigeria-targets-millions-informal-traders-boost-tax-2023-07-03/

Market and trade associations can be critical partners for lobbying against some of these tactics of repression, surveillance, benign neglect and forbearance. In several places, they have been critical for negotiating fair tax rates, defending legal rights, protecting property rights, strengthening capacity regarding food safety and handling, and gaining better working conditions (Lindell, 2010; Joshi, Prichard and Heady, 2014; Grossman, 2020; Vorley, 2023). Some of these associations are also bolstered via transnational networks, such as the network Women in Informal Employment: Globalizing and Organizing, which focus on building bridges and learning lessons from female informal workers across the globe. **Overall, the need to change the mindset of governments towards a more inclusive, trust-based approach to informal food actors will be essential to strengthen urban FSN.**

6.4 INNOVATIONS IN URBAN FOOD GOVERNANCE: CITIES AS FOOD-POLICY INNOVATORS

As illustrated above, the multiple actors in cities – formal and informal, state and non-state – hold different types of functions, mandates, capabilities, resources and political-economy incentives to shape food systems and their outcomes. Yet, this landscape is not static. Indeed, over the last 20 years, cities have been developing a more integrated approach to food-related policymaking, mobilizing a food-systems perspective and, therefore, including different sectors and actors in the process (Reynolds, 2009; Moragues-Faus and Morgan, 2015). As a result, **cities have become food-policy innovators.**

6.4.1 URBAN FOOD POLICIES AND STRATEGIES

Urban food policies reflect a deliberate process endorsed by the city government of developing or approving urban interventions to address food-system challenges (IPES-Food, 2017; Moragues-Faus and Battersby, 2021). In practice, urban food policies adopt a holistic perspective that integrates activities related to food, social economy and integration, environment and health and, therefore, require cooperation across multiple government departments and policy areas (de Cunto *et al.,* 2017; IPES-Food, 2017). For that purpose, there are two types of governance actions that can be taken (Bizikova, Echeverría and Hammill, 2014): **1) creating new food-policy frameworks, institutional arrangements or policies, and 2) mainstreaming food into existing governance tools, which is known as *food in all policies*** (Parsons and Hawkes, 2019). These approaches can be combined, as exemplified by the city of Baltimore, which has been a pioneer in integrating food in relevant government agencies, through the creation of the Baltimore Food Policy Initiative. This initiative brings together planning, sustainability, health and development departments to coordinate and support all the food-related work of the municipal government. Additionally, Baltimore has created ad hoc food-governance instruments under the umbrella of the Baltimore Food Policy Initiative, notably the Resident Food Equity Advisors – cohorts of residents who work to collectively drive equitable food policies through an inclusive and collaborative process, and the Food Policy Action Coalition – a multi-actor space representing non-profits, universities, farms, businesses, hospitals and residents to foster collaboration and idea sharing across food-related organizations (Boden and Hoover, 2018).

Urban food strategies refer to the process of "how a city envisions change in its food systems, and how it strives towards this change", which might be led and endorsed by governments or not (Moragues *et al.,* 2013, p. 6). Many cities are including diverse actors and developing participatory processes to define urban or city-wide food strategies that identify common goals and actions for different urban food actors beyond just public institutions (Moragues-Faus and Battersby, 2021). These urban food strategies build on efforts made by local actors and aim to create synergies across stakeholder groups

and the different dimensions of sustainability and FSN (Lim *et al.,* 2012; Blay-Palmer, Renting and Dubbeling, 2015). Amsterdam's Healthy Weight Approach uses a whole-systems approach in which local political, physical, social, educational and healthcare drivers of childhood obesity are viewed and governed as a complex adaptive system (Sawyer *et al.,* 2021). This approach has reduced child obesity in the city. The city of Brighton and Hove was the first UK city to develop a food strategy, in 2006, which has been refreshed twice and implemented through five-year action plans that set out how different urban actors can collectively achieve a healthy, sustainable and fair food system. The latest Brighton and Hove Food Action Plan (2018) included a consultation process with 600 participants. It includes 200 actions that involve almost 100 partners and 26 separate council departments. The long-term planning and implementation horizon of these examples is particularly notable given that in other cities, urban food-security strategies adopted by one administration may be dismantled after elections bring a new mayor or council with alternative priorities or perspectives to office (SEE BOX 13).

BOX 13
INTERSECTION OF PARTISANSHIP, ELECTORAL CYCLES AND URBAN FOOD-SYSTEM STRATEGIES

Electoral shifts can frequently affect momentum on urban food strategies. In Spain, the commitment to developments such as the Milan Urban Food Policy Pact coincided with shifts in the ideological affiliations of municipal members and mayors in the wake of elections in key cities, such as Barcelona, Madrid and Valencia. Specifically, coalitions of environmental activists, civic associations, and left-wing parties gained more power in the wake of the 2015 elections and emphasized the importance of environmental sustainability and the right to food. In Madrid, a food-policy platform was established shortly afterwards, which included municipal actors, civil society and private-sector actors who joined together to develop an urban food strategy. Yet, another election a few years later led to a change in the partisan affiliation of the mayor, and the city council obstructed both the platform and progress on the urban food strategy. Similarly, the Lusaka City Council committed to a food security initiative and the creation of a food-policy council in March 2020, working with major civil-society organizations such as the Consumer Unity and Trust Society and market associations. However, after the election of a new mayor in August 2021, momentum on this effort has stalled.

Because such shifts are common across democratic countries, it is critical to learn lessons on how to manage them to minimize disruption. Indeed, there are examples of cities which have been able to develop long-term food strategies and overcome electoral changes. In London, a combination of a permanent team of staff, policy networks, advisors and street-level implementers have successfully adapted the food policy priorities to changing political agendas of elected mayors. This has included mapping all the impacts and benefits that food interventions have in different statutory and non-statutory city strategies and ensuring elected officials understand how food can support the progress of their policy priorities, whether it is focused on economic growth, sustainability or poverty alleviation. Moreover, it has involved changing where the food team is housed within the council, from being a part of the Environment team to sitting in Social Integration, Social Mobility and Community Engagement. Engaging with a broader group of policy actors beyond elected officials, linking urban food strategy to oversight by a permanent team overseen by civil servants, and embedding it within mayoral priorities as well as statutory programmes offer some options for dealing with the policy disruptions created by electoral turnovers.

Source: Author's own elaboration, based on: CUTS. 2020. *The Lusaka Food Security Initiative.* Lusaka, Consumer Unity and Trust Society (CUTS) International. https://cuts-lusaka.org/pdf/policy-brief-the-lusaka-food-security-initiative.pdf; Parsons, K., Lang, T. and Barling, D. 2021. London's food policy: Leveraging the policy sub-system, programme and plan. *Food Policy,* 103: 102037. https://doi.org/10.1016/j.foodpol.2021.102037; Martín, D. and de la Fuente, R. 2022. Global and Local Agendas: The Milan Urban Food Policy Pact and Innovative Sustainable Food Policies in Euro-Latin American Cities. *Land,* 11(2): 202. https://doi.org/10.3390/land11020202; Zerbian, T. and de Luis Romero, E. 2023. The role of cities in good governance for food security: lessons from Madrid's urban food strategy. *Territory, Politics, Governance,* 11(4): 794–812. https://doi.org/10.1080/21622671.2021.1873174

To ensure a systemic and multi-actor approach to implementing urban food policies and strategies, cities have developed different types of cross-sectoral spaces of deliberation and collaboration, such as food partnerships, food coalitions and food-policy councils (in some instances referred to as multistakeholder platforms). By bringing together stakeholders from government, civil society and the private sector, these deliberative spaces are intended largely to characterize strengths and weaknesses of the local food system and to identify key food actors and priority interventions points, among other activities (Harper *et al.*, 2009; Scherb *et al.*, 2012; Moragues *et al.*, 2013; de Cunto *et al.*, 2017) (BOX 14). In many cases, their rules and mechanisms are rather fluid and flexible (Burgan and Winne, 2012; Clayton *et al.*, 2015; Moragues-Faus and Sonnino, 2019).

BOX 14
FOOD-POLICY COUNCILS

Food-policy councils (FPCs), as a form of multi-actor or multistakeholder governance platform, were first established in Knoxville (the United States of America) in 1982. They can be defined as "collaborative, membership-driven organizations that bring together stakeholders across private (e.g., small businesses, industry associations), public (e.g., government, public health, postsecondary institutions), and community (e.g., non-profits and charitable organizations) sectors to examine opportunities to implement integrated strategies for improving local and regional food systems" (Schiff, Levkoe and Wilkinson, 2022, p. 1). There are now over 350 FPCs in North America (Schiff, Levkoe and Wilkinson, 2022), and they are increasingly common in Europe (Michel *et al.*, 2022). Efforts have been made to embed similar structures in Africa, Asia and Latin America (Chirwa and Yossa, 2019; Nogales, 2019; Haysom and Currie, 2023).

FPCs have been advocated for as a mechanism to enhance food democracy and provide agency to citizens in shaping food systems and their outcomes (Bornemann and Weiland, 2019). Through their capacity to be responsive to local needs, to engage rights-holders, and to bring affected communities to the table, local food-policy councils have been identified as promising tools to embed the right to food (Lambek and Claeys, 2015).

However, the capacity of FPCs to advance food democracy and the right to food and to transform U-PU food systems has recognized limitations that must be addressed, including concerns that, unless carefully constituted and managed, FPCs may entrench existing power structures (Drimie, 2023). FPCs often lack resources to be transformative, but if external resources are obtained, this might skew power in the FPC towards particular interests and away from democratic principles (Michel *et al.*, 2022). A more radical perspective is that FPCs cannot be seen as coherent with a right-to-food approach, as they seek reform rather than to bring about the radical reform of the current agrifood system (Mooney, 2022).

How might FPCs be leveraged to increase agency and act to strengthen U-PU food systems for improved FSN for all? Lessons from the field suggest that it requires sensitivity to local politics, informed by long-term engagement, network building and reflexivity (Haysom and Currie, 2023). This requires ongoing evaluation of goals, outcomes and power dynamics within FPCs. In Rubavu (Rwanda), the challenge of capacity and resources has been addressed through long-term support from external partners (such as the Nutrition in the City Ecosystem). This has provided the support necessary to build the multi-actor platform over a period of two years and to develop common understandings and objectives which have led to shared actions to advance food security for vulnerable populations (Speich *et al.*, 2023).

Using FPCs to advance the right to food requires deep commitment to include the perspectives and participation of vulnerable populations. Baltimore has a Resident Food Equity Advisors programme explicitly aimed at increasing people's control and agency in the food system. This is a multistage, capacity-building and information-sharing process, which draws on lived-experience and guides local government decision-making (Mui *et al.,* 2022).

The strength and level of engagement of different types of actors shapes the capacity of these new mechanisms to democratize food policies and create more inclusive, pluralistic forms of governance. For example, some cities have more active and developed social movements that contribute to shaping and delivering city-wide food strategies, while others need to rely on government leadership (Moragues-Faus, 2020; Haysom and Currie, 2023). Furthermore, despite efforts to broaden the inclusion of diverse types of actors, the composition of these spaces is still rather homogenous and, therefore, might reinforce power inequalities in food systems (Cadieux and Slocum, 2015; Range *et al.,* 2023). Various studies highlight the need to underpin the design of multi-actor spaces with clear values, reflexive practices and effective mechanisms to identify and act upon existing power asymmetries in food systems, which inevitably play out in new co-governance platforms (Pereira and Drimie, 2016; McKeon, 2017; Pereira *et al.,* 2020). There is an increasing number of guides and manuals that identify key steps in setting up urban food-policy councils, as well as experiences from across the globe (Halliday, Platenkamp and Nicolarea, 2019; FAO, 2023b).

6.4.2 EMBEDDING CITIES IN TRANSNATIONAL NETWORKS

A more recent innovation in the urban food-policy arena is the creation of city food networks operating at the national, regional and global level. There is a wide range of initiatives, most of which have only been around for a decade or so, connecting knowledge, practices and resources across cities and, thus, configuring **a translocal urban food-governance landscape.** As seen in Table 5, existing municipal and city food networks differ according to their scale (national, regional or international), objectives and functions, membership requirements (city size and level of members' commitment) and decision-making structures (Moragues-Faus, 2021).

The Milan Urban Food Policy Pact (MUFPP) – a protocol developed in 2015 committing to develop sustainable food systems and now signed by more than 260 mayors across the globe, is a clear example of this increasingly networked urban-food agenda. There are also several international city networks, including groups working on food within wider networks addressing sustainability (for example the C40 Food Systems Network created in partnership with EAT Initiative, the ICLEI Global City Food Program and the Eurocities food systems' working group). National city networks often show a more direct participation of civil-society organizations in the facilitation of translocal activities. Relevant examples include the pioneering Sustainable Food Places Network in the United Kingdom, initially linking cities and now broadening to non-urban spaces, which connects 79 local food partnerships through a tailored learning, capacity-building and advocacy programme (Sustainable Food Places, 2024). Other examples include the Spanish Network of Cities for Agroecology; the Dutch City Deal which involves cities, three ministers and a regional government; the US Conference of Mayors Policy Task Force; and the Urban Laboratory of Public Food Policies (LUPPA), connecting cities in Brazil. These city-to-city alliances focus on sharing knowledge and experiences to accelerate the transformation of urban food systems, providing networking opportunities, technical assistance, developing and implementing monitoring frameworks,

TABLE 5
SNAPSHOT OF CITY FOOD NETWORKS

NETWORK	SCALE	YEAR STARTED	ANNUAL FEE	TYPE OF GEOGRAPHICAL AREA
Milan Urban Food Policy Pact (MUFPP)	International	2015	No	City
C40 Food Systems Network	International	2016	Broader network	Megacity
CITYFOOD Network	International	2017	No	City/municipality
World Organization of United Cities and Local Governments (UCLG)	International	2016 (Community of practice)	Broader network	Municipalities and regions
ORU-FOGAR United Regions Organization	International	2008 (Core group on food security)	Broader network	Region
EUROCITIES	International (European)	2016 (Food working group)	Broader network	Cities >250,000 pop. and important regional centres
Organic Cities European Network	International (European)	2018	Yes	Cities
Food Policy Networks (FPN)	National (United States of America)	2013	No	Municipalities, cities, counties, states, tribal, multicounty or other designated region
Sustainable Food Places Network (SFPN)	National (United Kingdom of Great Britain and Northern Ireland)	2011	No	"Places": Cities, municipalities and regions
U.S. Conference of Mayors Food Policy task force (USCM)	National (United States of America)	2012 (Creation of specific food taskforce within the Conference)	Broader network	Cities
Agroecocities: Ciudades por la Agroecología	National (Spain)	2017	Yes	Cities and municipalities
Dutch City Deal: City Deal "Food on the Urban Agenda"	National (Netherlands [Kingdom of the])	2017	No	Cities, region and nation (fixed membership)
German Bio-Städte Netzwerk	National (Germany)	2010	Yes	Cities and municipalities

Source: Adapted from Moragues-Faus, A. 2021. The emergence of city food networks: Rescaling the impact of urban food policies. *Food Policy,* 103: 102107. https://doi.org/10.1016/j.foodpol.2021.102107

engaging in issue-based campaigning or developing specific translocal projects. **City food networks have been signalled as playing a central role in multiplying urban food-policy initiatives across the globe and situating cities as key actors in food-system transformations within local, national and international agendas.** In the last decade, these networks, together with a range of actors from urban development and food arenas, have advocated for the recognition in global governance mechanisms of the role of cities and local governments, and succeeded in progressively integrating urban food systems into the sustainable development agenda (Forster *et al.,* 2023).

There are also other mechanisms that foster the translocal dimension of urban food governance. For example, the Glasgow Food and Climate Declaration, launched at the 2021 Conference of the Parties 26 of the United Nations Framework Convention on Climate Change, brought together 120 local and regional authorities from across the globe to commit to implementing integrated food policies to tackle the climate emergency. Similarly, to advance political action on the urban-food-climate nexus, the Barcelona City Council, together with other partners, developed the Barcelona Challenge for Good Food and Climate (2021), calling for cities to engage in a series of food-related commitments to tackle the climate emergency (The Barcelona Challenge, n.d.).

The novel systemic, multi-actor and translocal dimensions of urban food governance have been rapidly adopted by many cities across the globe, but regional differences exist. For example, a recent survey shows that despite the recent increase in interest on urban food reform, most Asian cities do not recognize food policy as a core function and do not have a cohesive vision on food systems, and therefore still require a significant amount of work to better integrate food matters into wider city planning (Romero, Jaffee and Kumar, 2023). Also, of the 260 signatory cities of the MUFPP, over 100 are in Europe, while the regions with higher populations – Asia Pacific, Eurasia and Southwest Asia – are those with fewer countries, cities and practices engaged in the pact (MUFPP, 2023). Similarly, there are numerous studies and initiatives reporting on activities in HIC cities in comparison to LMIC contexts, despite the fact that urban food governance innovations are distinctively shaped by specific historical, socioecological and political contexts. Innovations uncritically imported by LMIC contexts from HIC contexts may be ineffective without the interest and engagement of local civil society and the necessary institutional capacities for implementation by city governments (Haysom, 2021; Watson, 2021; Zhong *et al.,* 2023). Indeed, given the constrained fiscal environment of many local governments in LMICs, external financial support will be essential to foster such transnational networks and activities. The allocation of such resources must, however, be congruent with local priorities to avoid layering new expectations and objectives onto already overburdened, under-resourced local governments.

Moreover, **the translation of practices across context must contend with historical, social, ecological and political relations, including colonial and racist histories that underpin many current governance platforms** (Agyeman, Alkon and Duprey, 2023; Haysom and Currie, 2023; Hoey, 2023; Moragues-Faus *et al.,* 2023; Wegerif and Kissoly, 2023).

6.4.3 IMPROVING THE EFFICACY AND SUSTAINABILITY OF URBAN FOOD-POLICY INNOVATIONS

Urban food policy innovations are contributing to rethinking food governance more widely, but several questions remain on the actual impact of integrated urban food interventions on specific cities and the wider food system. First, **while there is a growing recognition that data and measurement is needed to enhance accountability for such innovations, the proliferation of measures might be overwhelming to local governments.** Some examples of efforts to monitor progress in specific cities include the MUFPP Monitoring Framework (RUAF, FAO and MUFPP Secretariat, 2021), the RUAF City Region Food systems

Indicator Framework (Carey and Dubbeling, 2017), the Barcelona Challenge Good Food and Climate Toolkit (The Barcelona Challenge, n.d.), the Sustainable Food Place's Every Mouthful Counts Toolkit (Food for the Planet, n.d.) and the Good Food Purchasing's Impact Calculator (Good Food Purchasing Programme, n.d.). A related challenge to these monitoring systems is that they are still relatively weak in terms of indicators to help better understand the collective impact of multi-actor action and the value of a systemic approach to food.

Second, **there remains insufficient evidence about whether these innovations make a difference and, if so, how.** For example, both New York City and Brighton and Hove have been viewed as pioneers in urban food-policy innovations and yet, their indicators on urban FSN have not improved substantially. This suggests either that such innovations have been impacted by binding constraints to transforming urban food systems such as austerity policies,– and, therefore, the absence of deterioration might even be an improvement, or that they might not have had sufficient time to demonstrate impact. Learning from these and other deviant cases – ones where the outcome contradicts the original expectation – is key to help advance thinking about whether and how multistakeholder and multisectoral approaches concretely affect food and nutrition outcomes.

Third, it is important to remember that **participatory spaces and urban food policymaking processes rarely include all key agents shaping urban food-system outcomes,** such as food corporations or the most vulnerable groups, and therefore, it is necessary to ensure these innovations are grounded in an accurate analysis of urban food governance dynamics and powers. Finally, these integrated urban food policies, strategies and platforms are not always calibrated to the types of functions, resources and capabilities, or to the range of political-economy dynamics between and across state and non-state actors. **Urban food innovations cannot emerge in a vacuum – they require policy champions, national and local funding to support the development of municipal networks, and private-sector and civil-society groups that are willing to invest time and resources in such initiatives.**

6.5 CONCLUSION

Strengthening urban food systems requires strategic attention to the governance contexts in which they are operating and the dimensions of power that prevail across and between spaces and actors (Leach et al. 2020; Resnick and Swinnen, 2023b). **One of the key messages of this chapter is that the contextual dimensions of the urban setting do indeed affect the degree to which certain interventions can be effectively implemented by local authorities, the range of partners who need to be engaged, and the types of incentive structures that need to be established.**

There are several important directions that emerge from the chapter. First, **clear delineation of mandates and responsibilities over urban food systems is essential to ensure accountability for action to urban residents.** Urban food-system stakeholder mapping that assesses which departments, ministries and agencies are responsible for which part of food systems, and whether they have sufficient budgets and human resources, is an important first step. Where mandates are shared across tiers of government or multiple municipalities in a metropolitan jurisdiction, effective coordinating institutions or platforms will be needed to enhance policy coherence and transparency.

Such **coordination tools** include urban food-system strategies or food-policy councils. However, these **face their own challenges in addressing different asymmetries in participation and voice and ensuring ultimate impacts on food-security goals.** To this end, regular evaluations by members of how such tools are working from a participatory viewpoint – and not just a food-systems perspective – can allow for meaningful reflection and iterative reforms. Other approaches, including making rights-based claims to food or to the city, will be difficult to effectively achieve in practice by communities that are unaware of what

these rights substantively mean or that lack legal support mechanisms to pursue them. However, rights-based claims can nonetheless be a powerful normative discursive device to ensure marginalized groups are included in multistakeholder/multi-actor convenings, as discussed in the section on food-policy councils.

Critically, urban food strategies and food policy councils will also need to be insulated from political volatility to be embedded within the city landscape over the long term. In this regard, such strategies and councils should be established with buy-in from different political parties at the outset, and should include building relationships with not only high-level urban politicians but also local government bureaucrats, such as town clerks, who have a longer-term commitment to the city. In any case, the success of such tools largely relies on local ownership. Donors and international development practitioners can complement such efforts and provide cross-country learning about what works or doesn't work for such mechanisms, but they cannot lead them or be the main impetus for their creation.

For LMICs in particular, the challenge of finance is an urgent one, especially in the wake of the COVID-19 pandemic and rising debt distress. As noted by the UN, 3.3 billion people are now living in countries where debt interest payments exceed health and education expenditures (United Nations, 2023b). With minimal own-source revenue, local and urban governments frequently must contain their ambitions or rely on other private and civil-society partners to achieve their food-system goals. Identifying ways to mobilize more revenue in equitable ways will need to be a priority concern going forward so that food systems recommendations are ultimately feasible.

In sum, the pathways towards strengthening urban food systems will need to be as diverse as the urbanization trajectories unfolding across the globe. From a technical standpoint, there is a range of different interventions and innovations that can address the many goals of creating just, healthy and resilient urban food systems. This chapter has also underscored that such **interventions need to be properly aligned to extant power dynamics and critically monitored and evaluated.**

CHAPTER 7

POLICY ACTIONS TO TRANSFORM URBAN AND PERI-URBAN FOOD SYSTEMS

Children at school in El Horizonte, Guatemala, 2018. Education and school initiatives, like school feeding programmes, contribute to food security and proper nutrition for students as a long-term social protection mechanism to protect vulnerable age groups. Nutritious school meals help keep food-insecure children in school and ensure their proper cognitive and physical development.

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KEY MESSAGES

- Transformation of U-PU food systems ultimately requires coordinated policy reforms that are appropriately calibrated to city contexts and capacities.
- Such contexts include the size, location, age and fragility of the city; degree of decentralization; intergovernmental political economy; strength of civil society; and strength of public service.
- These contextual dimensions, in turn, will shape the menu of potential policy instruments that can collectively bolster FSN. This chapter identifies six clusters of policy instruments, to be used in combination to develop integrated strategies. These are: regulatory policy, fiscal tools, transfer instruments, market policies, investments and behaviour-change instruments.
- Such instruments can be bolstered by cross-cutting actions, including enhanced data systems and subnational capacity strengthening.

7.1 INTRODUCTION

Food has been largely absent from urban and city-level public policies. Yet, over the last decade, **there has been growing awareness of the range of policy levers available to promote U-PU FSN. Thus far, however, such policies and innovations have not been assessed from a holistic perspective that also accounts for cities' unique contexts and capabilities.**

These unique contexts are defined by several characteristics of urban areas. First and foremost are the size, location, age and fragility of the city. Size affects the range of responsibilities and needs that must be addressed by authorities (Henderson, 2002; Ferré, Ferreira and Lanjouw, 2012; Sahasranaman and Bettencourt, 2021; Post and Kuipers, 2023). Larger cities need to cater to a much more complex array of food-system issues and may need to coordinate with municipal authorities across metropolitan areas, but often have more resources and a broader set of non-state partners as well as investors with which to address such issues. Smaller, secondary cities – which is where most of the urban population growth is occurring – may be more manageable due to fewer population pressures on urban services but often also have fewer economic resources or partners. The age of the city is also relevant – secondary cities that have emerged more recently may be able to pursue better urban planning and greater integration of new technological innovations. Whether cities are in low-lying coastal areas, drought-prone areas, near national borders, or land-locked holds important implications for the dimensions of food trade and vulnerability to climate shocks. Political stability of a city is another important characteristic, as political instability and unrest impact the food security of residents and the capacity of the state to respond to food insecurity.

Even similarly sized cities may not have equivalent responsibilities and resources to support food systems due to the nature of national decentralization processes. The nature of decentralization determines whether administrations can hire and fire their own staff, which mandates in the food systems space they have exclusive or concurrent authority over, their range of taxation and expenditure powers, and whether local leaders are directly accountable to urban residents. Relatedly, decentralization and intergovernmental dynamics also affect the strength of the public service. Under-resourced local governments may be unable to pay sufficient salaries to attract qualified workers or afford the basic office infrastructure for them to implement and monitor food-related and other policies. Taking these contextual dimensions into account, the next section details major policy

instruments that can be more or less relevant to the FSN priorities of a specific urban locality.

7.2 POLICY INSTRUMENTS

A range of policy instruments is required to shift institutional structures, power dynamics, and individual behaviours through the use of incentives, information, sanctions or financing (Vedung, 1997). In this chapter, six clusters of instruments are delineated: regulatory, fiscal, transfer, markets, investment, and behaviour-change policies. These policies are not always mutually exclusively. For instance, regulatory policies may directly impact behaviour change. In some cases, these policy instruments will be primarily under the mandate of national governments but will have an impact on urban food systems. In others, they will be directly under the control of local and city governments. In many instances, the instruments can also be advocated for and strengthened by private-sector and civil-society actors. They can, and often should, be combined into larger strategies, including urban food-system strategies connecting multiple food policies (see also Chapter 6). This section draws on case studies and sources available through academic publications, reports and repositories. As noted in Chapter 6, there is critical concern about the lack of substantive evaluation of interventions. However, the case studies presented do provide an understanding of the range of options available and the diversity of instruments and interventions at hand.

7.2.1 REGULATORY POLICIES

Regulatory policy instruments refer to the use of regulations, laws and other mandates to restrict harmful behaviours and promote those that are more socially optimal. Typically, violations of regulations result in penalties and fees. Regulatory policy instruments are diverse and include regulations of land use including zoning to promote urban agriculture or limit foods high in sugar, salt and fat, but also norms to modify other aspects of food environments such as advertisement.

Regulatory instruments are essential **to promote UPA**, ensuring access to land and tenure. There are examples across the globe of urban agricultural laws, which include a set of policy instruments (Food Systems Planning and Healthy Communities Lab, University of Buffalo, n.d.). For example, Kampala enforced five city laws (ordinances) that establish safety and sanitation requirements for urban agriculture as a legal practice, ensure land tenure for practitioners through a permit system, and establish support services (Halliday, Platenkamp and Nicolarea, 2019). Land use and urban planning are a key regulatory instrument used for example to promote and expand urban agriculture activities. In Argentina, the city of Rosario's world-renowned Urban Agriculture Programme (Programa de Agricultura Urbana, or PAU) has successfully included urban agriculture in the city's land-use plan, creating Parques Huerta (Vegetable Garden Parks), an initiative aimed at converting underutilized land to green spaces to help absorb excess water and prevent floods, and passing an ordinance to create a municipal land bank as a mechanism to assign vacant land for food growing. Rosario's Urban Agriculture Programme has expanded to its peri-urban area through the Green Belt Project, a land-use ordinance established in 2015 that permanently designated 800 hectares of land to be used for agroecological fruit and vegetable production (Halliday, Platenkamp and Nicolarea, 2019; WRI Ross Center, 2021). There are also increasing examples of using collective and cooperatives forms of urban and peri¬-urban agricultural land management schemes. An example are community land trusts, generally run by non-governmental and non-profit organizations that acquire and manage land on behalf of the local community's benefit, which might include the creation of community farms, community gardens or agricultural and forestry projects. There are successful examples in the United States, such as the Southside Community Land Trust where most participants come from low-income neighbourhoods to grow food to feed themselves and earn a part-time income either in the Trust's community gardens or the commercial farms (Ackerman *et al.*, 2018).

Land-use ordinances can also be directed towards **shaping urban food environments,** restricting for example the proliferation of unhealthy outlets. This is the case of the Los Angeles Fast Food Interim Control, Ordinance No. 180103, a moratorium on permits for new fast-food restaurants in South Los Angeles (the United States) (Food Systems Planning and Healthy Communities Lab, University of Buffalo, n.d.). Similarly, the Newcastle City Council (the United Kingdom) developed a Hot Food Takeaway Supplementary Planning Document (SPD) to guide planning decisions to prevent the proliferation of takeaways within a ten-minute walk of secondary schools and in high-concentration areas (Halliday, Platenkamp and Nicolarea, 2019). To enable better access to healthy foods, there are also means of supporting mobile or informal food vendors providing healthier food choices through special permits (NYC, n.d.; FAO, 2020c).

Despite increasing uptake, the efficacy of these tools as standalone interventions is not clear, as discussed in Chapter 4. Integration of zoning and other instruments is key to ensure impact. Using and coordinating the variety of tools employed in urban planning is essential to transform U-PU food systems (SEE BOX 15).

BOX 15
INTEGRATING FOOD INTO URBAN PLANNING

Although historically central to urban and regional planning, food largely fell off the planning agenda until the early 2000s (Pothukuchi and Kaufman, 2000). Since then, local governments have increasingly engaged in food-system planning, incorporating food in their planning agenda, prioritizing comprehensive plans, zoning and other regulatory forms. This has been bolstered by the inclusion of food planning in the New Urban Agenda. However, the integration of food into planning has focused largely on particular subsectors of the food system, such as urban agriculture (Cabannes and Marocchino, 2018). There are now efforts to incorporate both food-specific and food-sensitive aspects into planning. Food-sensitive planning engages a "food in all" approach, which recognizes how meeting people's food needs contributes to broader objectives of planning and urban design. Examples of food planning guidelines include Incorporating Food into Urban Planning: a toolkit for planning educators in Africa (Park-Ross and Duminy, 2019) and Food-sensitive planning and urban design: A conceptual framework for achieving a sustainable and healthy food system (Donovan, Larsen and McWhinnie, 2011).

Other regulatory policies include targeting specific foods, portions or food components to shape food environments. San Francisco (the United States) passed an ordinance that bars purchasing sugar-sweetened beverages with city funds and prevents their sale or distribution under contracts or grants (Halliday, Platenkamp, and Nicolarea, 2019). Other cities have implemented executive orders to set higher nutrition standards for all food purchased, prepared, sold or served by city agencies or publicly-manages spaces, including vending machines.

Regulation is also a key aspect of **food safety,** which in some cases is devolved to cities. An example includes the city of Guangzhou, which changed food reserves regulations to address the rapid demographic and economic growth of the city by including new procedures to supervise the city's grain, oil and commodity stocks, food quality and safety, auctions and procurement (Halliday, Platenkamp and Nicolarea, 2019).

BOX 16

NEITHER REGULATION NOR TRAINING ALONE IMPROVES FOOD SAFETY

The example of food-safety efforts in Nigeria shows that the efficacy of certain policy instruments to strengthen urban food systems can often only be assessed after a certain time lag. In 2008-09, researchers conducted a training, certification and marketing (TCM) intervention with butchers in the largest traditional abattoir and meat market in Ibadan – Nigeria's third largest city. The intervention aimed to improve food-safety knowledge, practices and meat quality. The intervention was successful in the short term. However, when researchers returned 9 years later, they found food safety had deteriorated. Authorities had established a large, modern abattoir outside the city as a public-private partnership. However, this was far from purchasers, and butchers resented the extra fees and distrusted the agenda of authorities. Attempted forcible removal of vendors from the old market was followed by riots, street shootings and the burning of a police station. As of 2023, the situation remains unresolved.

The case highlights the importance of complementary interventions beyond just regulation to strengthen urban food systems. Key lessons include:

- One-off training is not enough for long-term change. Ongoing capacity building and institutional support is needed to sustain improved practices.
- Modern infrastructure alone does not guarantee safety or acceptability to vendors and consumers. Upgrades need to consider context, costs and benefits for all actors.
- Effective multistakeholder collaboration and an enabling environment is essential. Attempts to relocate butchers to a new facility failed due to lack of consultation and perceived conflicts of interest, leading to clashes.
- Pilot projects may succeed, but long-term evaluation is critical to assess sustainability and scalability.

The case reflects the complexity of food systems and the need for holistic approaches engaging all actors to improve safety, livelihoods and public health outcomes. It highlights that training and technologies are not sufficient without ongoing support, appropriate incentives and a conducive regulatory framework developed collaboratively.

Source: Grace, D., Dipeolu, M. and Alonso, S. 2019. Improving food safety in the informal sector: nine years later. *Infection Ecology & Epidemiology*, 9(1): 1579613. https://doi.org/10.1080/20008686.2019.1579613

Box 16 discusses the need to ensure that policy instruments work together, in this case, in the interest of food safety.

Regulatory instruments have also been used to **shape what type of information is available to citizens and to provide tools to make better choices.** For example, London conducted a ban on unhealthy food advertising across the transport system while Amsterdam banned advertisements for foods high in sugar, salt and fat at all city-owned locations, at all city events, and in sporting event sponsorships where more than 25 percent of the attendees are children (Cohen, 2022). In the case of New York (the United States), the NYC Health Care (Article 81) require all food service establishment to have available for customers nutritional information. In several local governments in North America and the European Union, regulatory instruments are also a key lever for promoting circular economy efforts by creating certification standards around food packaging and food value recovery, technology standards about how food waste should be diverted, as well as banning organic foods in landfills (Ryen and Babbitt, 2022).

7.2.2 FISCAL INSTRUMENTS

Fiscal instruments are the range of taxes that can be employed to generate revenue for different tiers of government. Fiscal tools have been used to convert vacant spaces into **urban agriculture.** For example, Governandor Valdares (Brazil) has used progressive and regressive taxing policies to encourage the productive use of private spaces. Similarly, the city of Rosario (Argentina) and the city of Bulawayo (Zimbabwe) have created a tax exemption on land for urban agriculture. Fiscal benefits have also been mobilized to **ensure the availability of affordable and healthy foods in neighbourhoods considered as underserved** by grocery stores. An example includes Baltimore's (United States) Grocery Store Incentive Area Personal Property Tax Credit, under which new grocery stores or upgrades in a "Healthy Food Priority Area" can benefit from an 80 percent credit against personal property tax for 10 years, or New Yorks's Food Retail Expansion to Support Health (FRESH) programme aimed at grocery operators or developers that build or renovate stores in these areas. The programme provides zoning and fiscal benefits such as abatement of land tax; capping of building taxes; sales tax exemption; and mortgage recording tax deferral. This programme was inspired by the Pennsylvania Fresh Food Financing initiative and mirrored similar efforts in cities and states, and others implemented by the federal government. An evaluation of this programme highlighted how disparities in fruit and vegetable consumption have not improved in New York after the support to establish 27 supermarkets. Key recommendations to improve FRESH include to better identify food access needs through community planning, focus on availability of affordable healthy food and support other healthy food purveyors beyond traditional supermarkets (Cohen, 2018b).

Fiscal instruments can also be used to **increase the price of certain foods, such as the increasingly adopted sugar tax.** This instrument is mostly adopted by national governments (over 45 have instituted sugar-sweetened-beverage taxes), but there are examples coming also from cities such as those in the United States and from regional governments, for instance Catalonia (Spain) (Royo-Bordonada *et al.*, 2022). There are also other related instruments such as the Healthy Diné Nation Act, Navajo Nation which increases 2 percent sales tax on foods high in sugar, salt and fat and beverages and removes regular sales tax from fruit and vegetables (George *et al.*, 2021). It is important to note that these taxes have different designs and are applied in very different contexts, therefore the levels of impact are positive but varied. According to Popkin and Ng (2021), by and large:

"current tax rates are often considered too low, and the net impact, while important for public health, needs to be increased significantly. Increasing SSB taxation levels or expanding the tax base to include unhealthy ultra-processed foods and beverages offer options. Additionally, the tax revenues should be directed toward human capital investments, particularly those targeting lower-income individuals or households, to address equity concerns and strengthen public support."

As noted in Chapter 6, the rates at which taxes and levies are set should ideally be decided through consultative processes between traders, producers and local government authorities to ensure adequate revenue is collected without undermining incomes or food access. **Fiscal instruments need to be thoughtfully designed so that they do not further undermine the welfare of the most vulnerable,** and assessed according to the full set of costs that they help consumers internalize. For instance, while sugar-sweetened-beverage taxes tend to fall disproportionately on lower-income groups, they are not necessarily regressive if they shift such households to reduce consumption as a result of the price increase. In addition, such taxes can be progressive when second-order benefits, such as reduced health expenditures or additional years of life are taken into account (Allcott, Lockwood and Taubinsky, 2019). By contrast, sugar-sweetened-beverage taxes applied to small-scale informal food traders, who can rarely shift into a new livelihood, can be regressive if not properly designed. As such,

the rates at which taxes and levies are set should ideally be decided through consultative processes between traders, producers and local government authorities to ensure adequate revenue is collected without undermining incomes or food access.

7.2.3 TRANSFER AND REDISTRIBUTIVE MECHANISMS

Transfers are often intended to ensure that resources are redistributed to less well-off population groups in order to increase their resilience to shocks. These measures in many instances revolve around social protection and safety-net policies. Specific instruments might take the form of food donations or free access to meals, including free school meals, financial transfers to purchase food (different forms of food stamps), food cards for different vulnerable groups or financial transfers without a specific food dimension (Cohen, 2019; Morley and Morgan, 2021). This last dimension is very relevant, and it connects food-related interventions with other non-food urban policy areas such as housing, which have a very important impact on FSN in the city. However, the focus of this section is on food-related interventions. It is worth noting that emergency food aid and safety nets in many cities include not only local government action but also other levels of government, the intervention of different international organizations, NGOs, civil society organizations and other entities that have different levels of coordination. Examples of civil-society-led mechanisms include food banks and community fridges (Morrow, 2019b). In many instances, services are provided in partnership with social entities (for example, food bank referrals) or non-governmental initiatives receive public funds to provide services.

There have been key advancements in **linking these transfer instruments to a more empowering understanding of food insecurity and the need to address structural factors creating vulnerability.** An example includes the Plan Araraquara without hunger (Brazil) which is focused on eradicating hunger, reducing poverty and addressing social inequality by providing access to food for families living in extreme poverty, mainly women and black, indigenous and other people of colour with little schooling or work experience. The plan consists of four modules: Guaranteeing the Human Right to Food, Family Farming and Agroecology, Creative and Solidarity Economy, and Solidarity Network. Its goal is to create conditions for families to achieve financial independence and sustainability, while also restoring dignity (MUFPP, 2022).

Transfer instruments also include a wide variety of **grant programmes** aimed at supporting different types of interventions in urban food systems, from urban agriculture to shaping food environments or changing people's food choices. An early example comes from the city of Toronto (Canada) which in 1995 designed the Food Access Program to spend USD 2.2 million from a federal infrastructure grant on capital equipment. The programme provided capital funding to over 60 grassroots community groups to address food insecurity through diverse means. This included funding for student nutrition programmes to purchase basic kitchen equipment, funding for food-rescue and food-box organizations to purchase refrigerators and trucks, funding for volunteers for an outside baking oven that encouraged diverse ethnocultural groups to share bread, and funds for a storefront that provided after-school snacks and tutoring programmes for vulnerable children (Toronto Food Policy Council, 2016).

Subsidies are also a type of transfer instrument intended to incentivize consumption or production behaviours. For that purpose, both national and local governments, especially in HICs, have expanded the **use of subsidies on nutritious foods to expand dietary diversity** (Niebylski et al. 2015), which can be implemented by urban governments. For instance, almost half the states in the United States participate in the Double Up programme, which allows recipients of food stamps under the Supplemental Nutrition Assistance Program to double their benefits every time they spend on fruits and vegetables (Steele-Adjognon and Weatherspoon, 2017). In the United Kingdom, there is also the Healthy

Start Program for children and pregnant women, as well as efforts to increase vegetable portions in food servings, take aways, and in the formulation of meals, in addition to efforts to shift the placement of vegetables in stores to encourage greater consumption (see The Food Foundation, 2023). Again, however, such interventions that improve the affordability of healthy food must be coupled with investments in food access, underscoring the importance of an integrated urban and food-systems approach to design effective and long-lasting solutions. As discussed in Box 17, Mexico City has had a long-running programme to support subsidized access to prepared food through its Community Dining Rooms Programme.

BOX 17

COMMUNITY DINING PROGRAMME IN MEXICO CITY: WHERE COLLABORATION MEETS COORDINATION OF POLICY INSTRUMENTS

In response to food security challenges, Mexico City launched the Community Dining Rooms Programme (CDRP) in 2009. Aimed at supporting the city's most marginalized communities, the programme provides nutritious meals at a subsidized price, significantly impacting food poverty and community dynamics. Starting with 160 dining rooms, it expanded to 488 across the city, serving over 65 600 meals daily. The initiative operates on a co-responsibility model involving the government, academic institutions, civil society and the private sector. The Secretariat for Social Development of Mexico City provides the dining rooms with technical, administrative and economic support, including a subsidy to cover 61.5 percent of the cost of meals and a monthly endowment of non-perishable food. The dining rooms are operated by social and civic organizations or groups of residents. The private sector collaborates through donations and maintenance services. The dining rooms offer vulnerable groups opportunities for employment and participation in sustainable practices like urban gardening and composting. The CDRP's success is evident in the reduction of food scarcity from 15.5 percent in 2009 to 5.6 percent in 2018, demonstrating the effectiveness of collaborative approaches to food security and social well-being.

Source: FAO. 2018. *Mexico City: Community Dining Rooms Program.* Rome. [Cited 5 March 2024]. https://www.fao.org/3/CA0648EN/ca0648en.pdf

There are also **self-organized and autonomous initiatives addressing inequalities and redistributing resources to strengthen U-PU FSN.**

These different forms of collective action can take many different forms and coalesce around a variety of projects, from seed swaps to community fridges or collective kitchens. Civil society organizations have recently launched trials in France and Belgium to develop a social security of food, where citizens receive a monthly allowance to buy ethical and sustainable food. Inspired in universal healthcare systems, citizens make a contribution proportional to their income, but all receive the same amount for food (between EUR 100 and EUR 150 per adult and EUR 50 and EUR 75 per child), thus redistributing wealth. This initiative is based on values such as universal access. Linking the guarantee of the right to food to the support of farmers and environmental protection increases democratic governance through participatory decision–making and enhances purchasing capacity. The current trials are supported by public and, in some instances, private funds, and with diverse options for food supply (for more information see SSA, 2024).

7.2.4 MARKET POLICIES

Market policies shift the price of goods and services, including food, as a result of where such foods are sourced and whether they are reflecting actual market prices or have been inflated or deflated due to government and private-sector interventions. These types of policies, which can encompass public procurement and labour market policies, are critical to ensure a sufficient supply of high-quality, affordable food for low-income urban areas.

An example of how food prices can be altered to ensure access to healthy foods comes from Curitiba, Brazil, which has implemented two key programmes. First, Sacolão da Família comprises 16 specialized grocery stores situated on city-owned properties across the city. These stores offer a variety of fresh vegetables and fruits at a fixed price per kilo, providing customers with a substantial savings of 40 to 45 percent compared to regular retail prices. The Sacolão shops keep specific fresh produce prices low by charging market prices for other items and by benefiting from municipal premises. The shops acquire their products either from wholesale markets or local family farms within the Curitiba metropolitan area (de Paula and de Paula, 2019). Secondly, Nossa Feira operates as a mobile market that visits ten different locations within the city throughout the week (Junior *et al.,* 2017). It sells fresh produce directly from farmers in the peri-urban metropolitan area to consumers, also at a fixed price per kilo.

Another key market policy instrument is **public food procurement.** In this area, there is a wide range of activities and responsibilities that fall on different levels of government, but where city councils have played a key role (FAO *et al.,* 2021a). Public procurement programmes include school meals, as well as other settings, such as hospitals, day care centres, prisons or any food purchased, prepared or sold in public premises (Swensson *et al.,* 2021; de Schutter, 2015). As discussed more in Box 18, sustainable public food procurement has become a key tool to progress the Sustainable Development Goals and address simultaneously socioeconomic, environmental, health and justice concerns (FAO *et al.,* 2021a).

Finally, market policies include **labour market instruments** that have an impact on diverse stages and aspects food systems. There have been increasing calls to address labour conditions in the food sector and beyond in order to ensure the right to food. This includes increasing living incomes and wages in U-PU food sectors that reflect the true cost of living in cities. Cohen and Ilieva (2021) explain how in the case of New York, social and labour policies are key to accomplishing FSN outcomes. This includes wage increases, improved working conditions, protection against discrimination, food-sector job security and building wealth through worker cooperatives.

International trade policies have significant impacts on markets and affect the accessibility and affordability of food in urban areas. For instance, as the seminal work of Krueger, Schiff and Valdés (1992) and Bates (1981) argued, the reduction or elimination of import tariffs as well as export bans have historically been driven by the need to keep prices low for urban consumers. During the 2007–2008 food-price crisis and under COVID-19, such policies were widely used by governments as a response to urban riots or to prevent urban unrest (Per Pinstrup Anderson, 2014; Swinnen and McDermott, 2020). In Southern Africa, export bans of maize meal and soybeans are very common and often intended to bolster domestic agro processing and benefit urban consumers (Sitko *et al.,* 2017). However, some research finds that they are more likely to favour the incomes of the urban non-poor while also discouraging farmers from production in sectors targeted by bans, thereby lowering the quantity of domestic food available overall (Aragie, Pauw and Pernechele, 2018). Import tariffs are often used to protect domestic industry and are intended to shift consumer preferences to domestically produced rather than imported foods. However, several studies on African import bans of European chicken show that where the domestic industry cannot meet local demand, such measures often just increase the cost of food

BOX 18

SUSTAINABLE PUBLIC PROCUREMENT: THE POWER OF THE PUBLIC PLATE

Public procurement is a market policy tool capable of influencing the entire food chain, shaping what types of food are consumed and produced and therefore affecting the input industry, production, processing, packaging, distribution, retail, service, consumption, waste and disposal activities. Furthermore, the public plate caters for many citizens, but particularly for those more vulnerable, like school children, food-insecure groups, the elderly or hospitalized patients. The public sector can therefore lead by example by providing quality food and delivering a range of food security, nutrition and sustainability outcomes through its purchasing capacity. Public procurement can also align with the human right to food framework by following key principles such as targeting vulnerable groups, including small-scale producers, guaranteeing living wages and remunerative and fair prices along the supply chain, supporting food accessibility and adequate diets, ensuring environmental sustainability and including participation, accountability and empowerment as characteristics of the procurement modalities (De Schutter, 2014b).

Sustainable public food procurement has been fostered by different administrative levels, including local, regional, national and international bodies. Many cities have been playing a leadership role in driving some of these efforts, using public procurement to deliver a range of nutrition, socioeconomic and environmental goals. The city of Addis Ababa (Ethiopia) has implemented a universal school feeding programme to deliver nutritional, educational and socioeconomic benefits. As of 2022, the programme delivers meals to more than 450 000 students, increasing enrolment rates by 15 percent and reducing absenteeism, as well as creating 10 120 jobs for women. Another example comes from the Food Policy of Copenhagen (Denmark) which aims to reduce emissions from food consumption by promoting more plant-based diets, reducing food waste and passing a law that requires 90 percent of the food served un public institutions to be organic and 30 percent to be locally sourced by 2020. The majority of the 900 public kitchens met this goal and some exceeded it without increasing costs. This transition has been supported by tailored training and education services to kitchen and municipal staff (C40, 2023).

There are numerous guides and reports providing inspiring examples across the globe. However, despite progress in many cities, there is a still a need for coherent policies and regulations in order to develop ambitious tender criteria; and to ensure coordination mechanisms and supporting tools along the supply chain, from producers to kitchen staff and different administrative levels, in order to drive implementation (FAO *et al.,* 2021b).

overall, for both urban and rural consumers, and cause them to lose out on vital nutrients (Edwards *et al.,* 2022; Knößlsdorfer and Qaim, 2023). More generally, import tariffs and bans raise food prices and, in the absence of viable substitute foods that consumers are willing to shift to, can hurt the poorest urban consumers the most. In fact, recent analysis suggests that reducing barriers to trade, including both tariffs and non-tariff barriers, can help improve dietary diversification in LMICs (Gilbert et al. 2024).

Trade policies obviously have cross-border impacts when implemented by major global players. India's export ban of rice in 2023, for example, has hurt urban consumers of rice in West Africa, where such imports constitute a major share of their food basket (USDA, 2023c). Similar dynamics occurred with Indonesia's palm oil export bans in 2022, given that palm oil is a major ingredient in African cooking.

Although trade policy is largely controlled by central governments, Box 4 suggests that there may be entry points for urban government concerns to impact national trade negotiations.

7.2.5 INVESTMENTS FROM PUBLIC, PRIVATE AND COMMUNITY SECTORS

There are many areas that require outlays of new resources to reduce market fragmentation, enhance food safety, and improve resilience to shocks. Infrastructure investments are the most fundamental, including transport systems, drainage systems that manage water overflows during rainy seasons, marketplaces with adequate sanitation and storage facilities, processing factories, adequate tools for U-PU food production, and affordable housing. **Other types of investments include those for equipment,** such as adequate trash-collection vehicles to ensure waste is regularly removed from informal markets, as well as for data systems that can help consolidate existing fragmented information across local governments and serve as a repository for new information that facilitates planning decisions. For instance, many cities in Africa have outdated land cadastres, which undermines property tax collection, leads to insecure urban tenure and slum housing. **Investments in data collection and digitalization** are key to improve transparency in land governance. One report even showed that digitalization helped land administration systems globally cope during the COVID-19 lockdowns (FAO, UNECE and FIG, 2022). **Investments can be made by the public sector, private sector, donor support, civil society and community groups, or through public-private partnerships or public-community partnerships.** There are many examples where different actors provide resources. One example is the Mexico City Canteens (BOX 17), which include aspects such as physical infrastructure, management capacity, training and skills, and human resources in the form of volunteering or staff time. Another example includes the support community organizations provide to public social services in providing emergency food aid through soup kitchens or food banks.

The important element, however, is that investments are made to strengthen urban food systems rather than exacerbate some of its dysfunctions. For example, upgrading market infrastructure should not be done in a way that makes it unaffordable for traders to still afford a stall.

7.2.6 BEHAVIOUR-CHANGE INSTRUMENTS

Behaviour change policies are aimed at shifting the preferences and decisions of the broader population through either the selective provision of incentives and sanctions for certain behaviours or by providing new information intended to update preferences (Vermeulen *et al.,* 2020). From the perspective of food handlers, **training techniques** on safe food practices, coupled with sanctions for violating such practices, may help improve food safety over time. There is a wide range of opportunities for training in the food chain as a way of changing behaviours. An example comes from Bangladesh, where smallholder farmers have been trained on how best to produce vegetables in urban and peri-urban areas and their importance for a nutritious diet (FAO, 2023d). Another example is the training on school feeding of farmer organizations and local institutions from Koungheul and Bambilor in Senegal (FAO, 2022b). From the perspective of consumers, there are various **marketing techniques** that can increase awareness of the need to consume healthy foods. Fesenfeld and Sun (2023) discuss campaigns focused on animal welfare as a way of reducing red meat consumption in places such as China, Germany and the United States.

Advertising also plays a pivotal role in informing consumers about food and shaping their choices, and there are longstanding concerns about the use of traditional and (now) social media platforms that promote foods high in sugar, salt and fat, specifically targeting children and adolescents (Finlay et al. 2022; Kucharczuk, Oliver and Dowdell, 2022; Neufeld et al. 2022: WHO, 2022). Efforts to transform food advertising include promoting sustainable food in various public and private settings, ranging from public transport, schools and healthcare facilities to television channels, events, advertisements and social media.

Simultaneously, it is crucial to restrict or ban advertising that promotes unhealthy food, commonly referred to as junk food.

Additionally, marketing strategies employed to sell food products are diverse, including advertisements, product placement, special offers, sponsorship and free samples, among others. There are increasingly sophisticated techniques, such as **nudging**, used to influence behaviours and promote both healthy and unhealthy eating. These practices can be harnessed in various ways to encourage sustainable diets. For example, San Francisco has prohibited restaurants from providing free toys with children's menus unless the meals meet minimum nutritional standards (Otten *et al.,* 2014).

Improving **food labelling** is a crucial factor in promoting more sustainable decision-making. Several studies indicate that people's food choices are influenced by nutritional factors, even though a significant portion of the population struggles to comprehend existing labels, which typically only display product composition. Therefore, enhancing this information is essential. European labelling regulations allow for voluntary changes, such as implementing systems like the traffic light system or Nutri-score (European Commission, 2024). These systems rate products with high energy, sugar, salt and fat contents as red. Beyond the food industry, innovative initiatives have emerged in restaurants, workplace cafeterias, stores and as mobile applications, offering this type of information to consumers. Melbourne employs the traffic-light labelling scheme for food and beverages at public leisure centres and events, including vending machines (Halliday, Platenkamp, and Nicolarea, 2019). In Mexico and Chile, there have been positive results from mandatory front-of-package labelling policies that incorporate visible warnings about foods with excessive sugar, salt and saturated fat content (Contreras-Manzano et al. 2023; Fretes et al. 2023).

7.3 CROSS-CUTTING POLICY ACTIONS: DATA AND CAPACITY STRENGTHENING

The six policy instruments highlighted in this chapter will depend on a set of cross-cutting investments in data transparency and subnational capacity building. Specifically, **improved collection and transparency of data and budgets on urban food systems and food security helps uncover the complexity of urban food dynamics, characterizes problems and the diverse ways they impact different groups and areas of the city, and therefore contributes to improving the design of solutions and monitoring of those interventions.** Currently, a lot of data is being generated that is not accessible due to the commercial interests of agrifood companies and academic publishers (for example, variations of food prices in supermarkets between neighbourhoods). One innovative example to increase transparency of food systems data is Sampa+Rural in São Paulo, Brazil, which is a publicly accessible platform for audiences of all (dis)abilities and which tracks agricultural production and distribution within the city as well as providing a one-stop-shop for key urban planning, food and environmental policies. Budget transparency for food system investments and complementary human resources are also needed. Civil society and advocacy groups can play an important role in tracking down budget expenditures related to food, as shown by CUNY's Urban Food Policy Institute (2019) to analyse spending on food in New York City's budget.

In order for improved data to be accurately generated and properly utilized, subnational entities need to be properly capacitated. Subnational public sector actors who oversee the implementation of policies that either touch on discrete elements of food systems (for instance, monitoring of food safety compliance, taxation of market traders, waste collection) or of broader, integrated food-system strategies may not always have sufficient technical capacities or resources to do their jobs effectively. This capacity limitation can manifest in terms of

insufficient technical knowledge, absence of a systemic understanding of how different departmental responsibilities intersect with each other, and lack of capacity to anticipate challenges to urban food-system resilience, particularly climate shocks (see Fox and Resnick, 2022). Strengthened capacity at the subnational level is therefore an important enabler of the implementation of food-system policies. There are some initiatives that are doing this to prepare the next generations of policymakers (Den Boer *et al.,* 2021), such as the 22 research and innovation projects funded by the European Commission working on urban food-system transformation through a multi-actor approach (European Commission *et al.,* 2023). A key tool implemented in these projects is the development of **urban living labs**. For example, in the FIT4FOOD 2030 project, European policymakers and professionals work with science organizations and universities, citizens, local policymakers and industry, through "city labs" (FIT4FOOD2030, n.d.). Yet, evidence of more integrated public-sector capacity strengthening with urban authorities to address multisectoral issues, such as food systems, remains quite thin.

7.4 CONCLUSION

This chapter presents examples of both good practices and less successful ones across multiple policy spheres. A critical concern is that, in many of these domains, **there is a lack of substantive evaluations of interventions and a lack of aggregated data beyond specific cases.** This makes it hard to assess the impact of these interventions on real food-security and food-systems change, to understand why interventions succeed or fail, and what lessons can be transferred across contexts. Such an undertaking should be the priority of urban food-policy researchers and practitioners to ensure more robust policy interventions going forward.

Notwithstanding this concern, the policy instruments and actions presented in this chapter aim to offer a holistic perspective on how to strengthen urban FSN. **Discrete policy tools need to be complemented by investments in institutional enablers, such as multilateral food working groups, multi-actor platforms and multilevel governance mechanisms that are sensitive to local urban contexts. These discrete policy tools should then be integrated into broader food strategies. Ultimately, each city must develop a unique pathway that relies on a combination of these interventions.**

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

Fresh produce on sale, Alajuela, Costa Rica, 2015. Maintaining and increasing diversity (of retail types and locations, of modes of access to food, of pathways from production to consumption, of sources of food and of types of food) within urban and peri-urban food systems is essential to ensure food security and nutrition for urban and peri-urban residents, and to build systemic resilience to shocks.

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The ultimate objective of efforts to improve food systems is to improve all dimensions of U-PU FSN and to ensure consistent and affordable access to healthy diets, particularly in the context of shocks. This depends on strengthening U-PU food systems and other non-food systems' actions, which requires appropriate governance and policy approaches informed by the U-PU context. Given the nature of U-PU food systems and the many factors driving their transformation, efforts to govern systems should be multilevel, multisectoral and multi-actor, and informed by the principle of reinforcing fundamental rights to food and to the city.

Given that food-system activities within U-PU areas are governed by different levels of government and that U-PU food-system activities take place along the rural–urban continuum, mechanisms for alignment across levels of government are essential to ensure policy coherence and effective resource use. Multilevel governance approaches are therefore essential. Similarly, food-system and FSN outcomes in U-PU areas are shaped by factors beyond the food system and therefore require multisectoral governance approaches. Finally, actors from within food systems need to be included in governance processes to enable them to be active agents in transforming food systems. It is essential that these multi-actor processes have principles of equitable inclusion embedded within them.

The right to food and the right to the city should be integrated in all measures to address food insecurity in U-PU contexts. This means: recognizing interrelated, interconnected and indivisible human rights; recognizing the obligations of states, local authorities, the private sector and the rights and responsibilities of civil society, implementing human rights, specifically the right to food, to transform U-PU food systems at local levels; and integrating human-rights-based approaches in city-level governance, including statutes, planning and programmatic documents.

Policy initiatives should uphold the right to food and other human rights, such as the right to life, health, water, education and adequate housing, which in the urban context can be articulated under ensuring the right to the city. Specific measures should include access to space for growing food in the city, public participation in the design and use of urban spaces, and the provision of public space for food vendors.

A central consideration for users of these **recommendations is that they should be considered through the unique context of the urban/peri-urban setting in terms of size, location, age, socioeconomic status, infrastructure and fragility.** More broadly, degrees of decentralization, intergovernmental political economy, the strength of civil society, and the strength of public service represent other distinguishing factors that necessitate policy differentiation. Further, different policy instruments should be used in combination to develop integrated strategies.

It is essential to support and strengthen local and territorial aspects of U-PU food systems, with particular attention to small-scale and informal actors. However, it is important to note that many U-PU residents, particularly those most vulnerable to food insecurity in many LMICs, will continue to depend on food from elsewhere. It is therefore important that trade and supply chain policies be directed towards increasing access to healthy diets for U-PU residents. Further, policies to localize the system should be mindful of the impacts of U-PU food-system interventions on people and places outside the U-PU areas. Therefore, trade policies that undermine local food systems should be discouraged. These policies must be embedded in a broader understanding of how and to what degree growing corporate concentration in the global food system affects the capacity of U-PU governments to deliver healthy diets to their residents.

Maintaining and increasing diversity (of retail types and locations, of modes of access to food, of pathways from production to consumption, of sources of food and of types of food) within U-PU food systems is essential to ensure FSN for U-PU residents and to build systemic resilience to shocks. **The crucial role of informal-sector**

actors in providing access to affordable food to vulnerable U-PU residents, particularly in LMIC contexts, must be carefully assessed and addressed. Central to this is the need to improve food safety across all food-system activities, while ensuring the mitigation of trade-offs between promoting food safety and regulations and the potential negative impacts on informal segments and actors within food systems.

Interventions in U-PU food systems should be oriented towards creating food systems that are: equitable, just and inclusive; productive and prosperous; participatory and empowering; resilient; regenerative and respectful to the ecosystem; and healthy and nutritious.

These broader considerations underpin the following recommendations.

A. Urban and peri-urban food systems for FSN

Interventions in U-PU food systems should be oriented towards creating food systems that are: equitable, just and inclusive; productive and prosperous; participatory and empowering; resilient; regenerative and respectful to the ecosystem; and healthy and nutritious. This requires action across all food-system activity clusters.

Production: Local governments, with other subnational government actors (provincial, county, etc.) should formulate and encourage provisions to protect and promote sustainable food production, through agroecological principles and other innovative methods, in U-PU areas through:

- land-use zoning to protect urban agriculture, livestock and fishing activities;
- prioritizing access to land, water, innovation and technology, and finance for projects that support urban livelihoods, address the needs of the most food insecure and promote sustainable practices;
- supporting territorial systems and shorter supply chains to facilitate market access for U-PU producers and to increase accessibility of fresh produce for U-PU residents; and
- partnering with civil society and research organizations to provide extension services to U-PU farmers and producers, promoting regenerative and nutrition-sensitive practices.

Trade: National governments, together with local government actors, should work to ensure that trade regulations and policy are oriented towards increasing access and affordability of healthy diets, with a particular focus on poor families, protecting U-PU populations from the increasing availability and targeted marketing of foods high in sugar, salt and fat and protecting the interests of small-scale and informal operators. This can be done through:

- including local government in national dialogues on food-trade policy to raise awareness of the specific needs and contributions of U-PU food systems to the national economy and FSN, and by strengthening the capacity of urban food-policy actors to engage with trade and investment policy stakeholders;
- considering the implications of trade policies on poor and food-insecure U-PU consumers; and
- assessing the role of the informal sector in cross-border trade and integrating provisions in policy to support and protect this trade from harassment and extortion.

Midstream: Addressing the midstream activities (storage, processing, transportation and wholesale) in urban food supply chains is essential for creating equitable and efficient food policies that benefit all stakeholders in the supply chain. National and local government and private-sector actors should work together to:

- encourage both public and private investments in infrastructure, logistics, innovation and technology and capacities in the intermediary sector of urban food value chains, particularly for fresh and perishable foods;
- foster diversity of midstream food actors through mechanisms to support small-scale and informal-sector actors, including the development and maintenance of public food infrastructure (for example wholesale, traditional and digital markets), and ensuring fair supply-chain practices to redistribute value;
- ensure that food-system planning codes and regulations include informal processors operating in U-PU areas; and
- support wholesale markets to strengthen connections with small-scale producers, leveraging them to increase access to affordable, diverse and healthy diets.

Markets and retail: National and local governments, in accordance with their respective functions, should:

- strengthen different types of markets and retailers (wholesale, traditional, wet, weekly) in the U-PU areas in enabling access to healthy and affordable foods and promoting livelihoods;
- protect and sustain traditional markets, incentivizing investment in infrastructure, operations, logistics, innovation and technology, and access to water and energy, as well as fostering closer links to small-scale food producers and local communities;
- work with market traders and street vendors to improve food safety by: (i) creating an enabling environment (where local and national authorities support food safety through investment in basic infrastructure, policy and regulation, capacity building and monitoring and surveillance activities); (ii) providing appropriate training and technology for value chain actors; and (iii) providing incentives for behaviour change;
- incentivize the sale of healthy and sustainable food, while disincentivizing unhealthy food and food that is harmful to the environment through appropriate legal and regulatory instruments, such as taxes and subsidies, warning labels, food licenses, preferential trading locations for vendors selling healthy foods and zoning restrictions on the marketing and sale of foods high in sugar, salt and fat;
- provide incentives for the establishment of healthy food outlets in underserved areas, encouraging food-retail diversity;
- prioritize – together with private-sector actors – support for innovation and technologies for small businesses and projects that connect consumers to smallholder farmers through apps and delivery services, such as community-supported agriculture programmes; and
- promote behaviour change towards healthier food choices on the part of consumers through targeted education and awareness raising, informed by the structural drivers of food choice, which can include front-of-pack labelling, public education campaigns and taxation of foods high in sugar, salt and fat.

Public procurement and non-market initiatives: In addition to strengthening markets, non-market food sources, such as public procurement, community kitchens and remittances, should also be supported and developed to cater to the most vulnerable population groups and to provide buffer in times of crises. National and local governments should:

- invest in nutrition-oriented public procurement programmes, specifically targeted at vulnerable populations within U-PU populations;
- prioritize local, agroecological and small-scale farmers in public procurement programmes, particularly within school feeding programmes and programming aimed at nutrition in the first 1 000 days;

- develop local bylaws that support the decentralized development of food banks and community kitchens, as well as deferral of surplus food to food banks, community kitchens and other food distribution programmes, informed by principles of dignity and agency; and
- strengthen the role of civil society organizations in providing food aid in times of crisis, harnessing their capacity to reach vulnerable populations.

Food loss and waste: Local governments, in collaboration with market associations, private sector actors, resident associations, as well as individual establishments, should strive to minimize food loss and waste. This could be achieved by:

- providing supportive infrastructure (shading, cold storage units) and access to innovation and technology to informal-sector actors to increase fresh food access, preserve vitamins and minerals in perishable foods and reduce food loss and waste;
- providing restaurants with guidelines, training and resources to mitigate food waste;
- creating awareness among consumers to reduce food waste; and
- promoting and supporting circularity through composting, biogas digestion, feeding waste to livestock, donation of surplus food to food redistribution programmes, etc.

B. Urban and peri-urban non-food systems for FSN

Food security and nutrition are affected not only by food systems, but also by interrelated systems such as health, education, housing, water, energy, infrastructure and finance. In U-PU areas, spatial inequality and unequal access to services is an important driver of poor FSN outcomes. It is critical to adopt a holistic approach with policies targeting key actions in these other systems, and to address U-PU poverty and inequality.

National and subnational government, together with private-sector actors and civil society organizations should:

- ensure that infrastructure investments, including for transport, are equity sensitive, and include informal-sector actors and food-insecure consumers;
- explicitly integrate food into urban planning, including incorporation of food-sensitive planning and design principles;
- integrate food-trade infrastructure in transport planning to enable the sale of healthy meals to commuters;
- incorporate food-security planning into housing and zoning policy;
- establish financial mechanisms, such as microcredit or subsidies, to assist small-scale producers and food-system actors in acquiring inputs and technology;
- incentivize investments towards low-income residents and neighbourhoods for the provision of water, sanitation, waste management and reliable energy to enable healthy diets, safer food handling, and washing, preparation and cooking of meals at home;
- enhance decent work and employment in U-PU food systems, including by providing childcare spaces within traditional markets, promoting occupational safety and health, guaranteeing labour rights, etc.;
- strengthen urban health services (neonatal and infant nutrition guidance, prevention diagnostics) for FSN outcomes;

- acknowledge temporal variation in U-PU food insecurity and frame social protection policies and programmes to be responsive to periods of heightened food insecurity;
- develop and invest in social protection programmes targeting specific U-PU contexts; and
- promote nutrition in health services, particularly for women of childbearing age and pregnant and breastfeeding women, and in paediatric services. These should be informed by the lived experience of U-PU residents.

C. Urban and peri-urban governance for FSN

Addressing U-PU FSN requires shifts in governance approaches at the national and local levels, recognizing the prevalence of U-PU food insecurity. This recognition should drive investment and governance approaches that are inclusive of subnational governments and incorporate a broad range of voices from civil society, research and the small-scale private sector. It is essential to prevent and mitigate the negative effects of concentration in food supply chains on urban livelihoods and on the accessibility and affordability of diverse, sustainable and healthy diets in urban areas. This entails promoting policies that foster competition and diversification within these supply chains.

National governments should:

- increase financing and capacity of local and urban governments, particularly in LMIC contexts, to tackle urban food-system challenges, and identify and promote innovative approaches for mobilizing resources (such as municipal bonds) and ensure sufficient municipal staff with holistic skills to address food-system challenges;
- include local and subnational government in the development of national policies that are relevant to the food system, inclusive of agriculture, nutrition, environment, gender and trade policy; and
- ensure that municipal financing is adequate and coherent with municipal mandates.

National and local government should:

- identify the mandates of different levels of governance in shaping FSN and food systems in U-PU areas, and ensure that U-PU food systems policy is multilevel, multisectoral and multi-actor;
- clearly delineate the mandates and responsibilities over the urban food system across different tiers of government and other sectors to ensure accountability for action to urban residents (including through stakeholder mapping to assess responsibilities, available instruments and financial and human resources); and
- ensure coherence and coordination of policies and programmes within urban departments and across levels of government and sectors, including through urban food strategies, joint integrated food policy offices and strategies, coordinated urban food units or multistakeholder platforms.

National government, local government, civil society organizations and private-sector actors should:

- develop inclusive multi-actor platforms to encourage active participation of local communities in decision-making processes, including through building their capacity to effectively engage, and addressing inherent power imbalances; and
- build capacities of urban food-system actors (especially the underrepresented, such as traditional market-trader associations and consumer associations) to enable stronger representation.

D. Urban and peri-urban resilience and sustainability

Urban and peri-urban food systems and U-PU areas more broadly are increasingly vulnerable to shocks and crises. The impacts of these are unequally experienced and often increase U-PU inequality. There is a need for proactive planning to reduce vulnerabilities and increase systemic resilience. Resilience planning should be informed by the lived experience of vulnerable populations, should include civil society organizations, and should apply practices that have demonstrated impacts on household and community resilience.

National and local government should:

- develop U-PU food-system resilience plans and establish contingency planning and early warning systems for fragility and shocks;
- identify critical food infrastructure to be prioritized in times of crisis, and populations and areas most vulnerable to food insecurity in times of disaster and shock;
- embed resilience thinking into urban planning and design;
- include food-system support in disaster-response funding plans at all levels, from national to local;
- maintain and enhance food system diversity in terms of sources, supply chains and retail typologies, to bolster systemic resilience, considering the impact of U-PU food-system decisions on resilience in rural hinterlands and beyond; and
- integrate food into climate-adaptation plans.

E. Data, research and knowledge for FSN

There is a need for more granular, U-PU-specific FSN data and research. Evidence-based decision-making needs targeted data collection, management, analysis and dissemination across food-system actors and interactions across different systems.

National and subnational government, in partnership with academia and civil society should:

- develop U-PU-specific FSN data tools;
- add a specific food security module to city household surveys;
- invest in information technology and digital systems to improve the evidence base for policymakers and food-system actors to plan, prioritize, design and track food system activities;
- ensure finer-grained disaggregation of data (along the urban–rural continuum, city size, intracity), to allow analysis of intersectional vulnerability;
- incorporate qualitative data into U-PU food policy;
- use geographic information systems, remote sensing, digital tools and participatory mapping to identify areas most vulnerable to food-system disruption to inform long-term planning and crisis response;
- invest in monitoring and evaluation of food policies and programmes, including non-food specific impacts (such as economic development and environmental sustainability); and
- invest in and learn from city food networks as a mechanism for sharing knowledge, training and increasing local government voice in national and international policy spaces.

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In an era in which almost 80 percent of the global population resides in urban and peri-urban (U-PU) areas, understanding and addressing the complexities of U-PU food systems is more critical than ever. This groundbreaking report by the High Level Panel of Experts on Food Security and Nutrition (HLPE-FSN) challenges prevailing narratives, revealing that over three-quarters of the world's food-insecure population lives in urban and peri-urban regions, and that U-PU areas are epicentres of multiple burdens of malnutrition.

The report provides an in-depth analysis of the unique challenges and opportunities in these areas. It shows how U-PU areas have a profound impact on food systems, influencing production, distribution and consumption patterns worldwide. The report emphasizes the need for equitable, accessible, sustainable and resilient food systems, for the realization of the right to food.

The report also stresses the importance of multilevel, multilateral and multi-actor governance and highlights the intricate linkages between food systems and other critical systems related to water, energy and mobility. With action-oriented policy recommendations, this report is an essential tool for policymakers, researchers and stakeholders dedicated to ensuring food security and nutrition in the context of rapid urbanization.

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