Istituto Affari Internazionali

ISSN 2532-6570

IAI COMMENTARIES 24 | 72 - DECEMBER 2024

Tackling the Climate-Food-Migration Nexus through Urban Food Systems

by Thin Lei Win

Today, more than half of the world's 8-billion population live in urban areas.[1] Cities are where billions of people live, work, commute to and from, and relax in. The trend is set to continue, driven by economic opportunities in cities and rural-to-urban migration, according to the United Nations' housing agency UN-Habitat.[2]

"We are witnessing a world that will continue to urbanize over the next three decades – from 56 per cent in 2021 to 68 per cent in 2050. This translates into an increase of 2.2 billion urban residents, living mostly in Africa and Asia", said the World Cities Report 2022.[3] "Cities are here to stay, and the future of humanity is undoubtedly urban", it added.

The urban impact on food systems

All of this has implications for urban planning, housing, infrastructure, environmental impact, and most importantly, food systems. People living in urban areas have to rely on others for their sustenance. Urban demand has a domino effect on the overall demand, supply, marketing and consumption of food.

Yet much of the focus on boosting food security, building climate resilience

[1] World Bank Data: *Urban Population (% of total population)*, https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS.

[2] UN Human Settlements Programme (UN-Habitat), *Envisaging the Future of Cities. World Cities Report 2022*, Nairobi, UN-Habitat, 2022, p. xv, https://unhabitat.org/wcr/2022.

[3] Ibid.

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and easing the internal migration that brings millions of people from villages to cities every year, is on reducing rural poverty and agricultural development. This is a legacy of viewing hunger and malnutrition as linked solely to agricultural output in rural areas. But urban food systems are under increasing strain not due to inefficient production patterns in rural areas but rather due to the growing population, changing dietary patterns, climate impacts and land use and resource constraints. In turn, ever-larger urban populations and changing diets are intensifying pressure on supply chains which are already under stress as a result of climate change, leading to a vicious cycle. Despite this, there is a lack of understanding – and urgency – around the need to ensure that urban food systems, especially in the developing world, are sufficient, equitable, sustainable and healthy.

Two significant reports released recently by the High-Level Panel of Experts on Food Security and Nutrition (HLPE-FSN) of the UN Committee on World Food Security and by the International Panel of Experts on Sustainable Food Systems (IPES-Food) highlight the interconnected and multifaceted nature of urban food systems and the pressing need to support and reform them.[4] They add to a small but growing list of literature on this topic, which has consistently pointed out the role of urban food systems in improving overall food security and nutrition, the opportunities and challenges they pose and the risks of their continued neglect.[5]

Here are three key reasons why the world needs to pay more attention to urban food systems.

Urban and peri-urban food environments drive local, national and global trends

Diets and food consumption in urban and peri-urban[6] areas shape global food chains. Over 70 per cent of the world's food is consumed in urban areas,[7] making cities critical hubs for influencing national and international food dynamics. Urban diets are also significantly more resource-intensive since they are generally higher in animal protein and highly processed foods.[8] The former is a major driver

[4] HLPE-FSN, *Strengthening Urban and Peri-Urban Food Systems to Achieve Food Security and Nutrition, in the Context of Urbanization and Rural Transformation*, Rome, HLPE-FSN, 2024, https://openknowledge.fao.org/handle/20.500.14283/cd1459en; IPES-Food, *Food from Somewhere. Building Food Security and Resilience through Territorial Markets*, 2024, https://ipes-food.org/?p=5435.

[5] James Tefft et al., *Urban Food Systems Governance. Current Context and Future Opportunities*, Rome, FAO and World Bank, 2020, https://doi.org/10.4060/cb1821en; Daniela Lüth et al., *Urban Food System Transformation in the Context of Food 2030. Current Practice & Outlook towards 2030*, Luxembourg, Publications Office of the European Union, 2023, https://data.europa.eu/doi/10.2777/507125.

[6] Peri-urban refers to an area immediately surrounding or adjacent to a city or town.

[7] Food and Agriculture Organization (FAO), *A Sustainable Transformation of Urban Food Systems: FAO Expert Panel at the 2023 Global Forum for Food and Agriculture*, 17 January 2023, https://www.fao.org/urban-food-agenda/news-events/news-detail/en/c/1628734.

[8] John Kearney, "Food Consumption Trends and Drivers", in *Philosophical Transactions of the Royal Society B: Biological Sciences*, Vol. 365, No. 1554 (2010), p. 2793-2807, https://doi.org/10.1098/rstb.2010.0149.

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of environmental degradation and climate change through the emission of greenhouse gases, the pollution of water and soil, and the loss of biodiversity.[9] The latter has been linked to the rise in non-communicable diseases such as high blood pressure and cardiovascular diseases, heart attacks and strokes.[10]

Urban food demands also have a profound influence on rural diets, said Jane Battersby, lead author of the HLPE-FSN report and associate professor at the University of Cape Town, South Africa.[11] Battersby pointed to a food system myth that assumes ultra-processed foods are not yet in rural areas, but said studies showed that 50 per cent of Africans living in rural area are within 14 kilometres of a city.[12] This proximity means rural populations are often shaped by urban food systems.

In addition, while food insecurity and malnutrition are often portrayed as rural issues, data show that "three-quarters are in urban and peri-urban areas", said Battersby. "The challenge of food insecurity and malnutrition is increasingly concentrating in urban and peri-urban areas", she noted, calling policymakers not to continue neglecting urban hunger. Indeed, of the 2.2 billion moderately and severely food-insecure people globally, 1.7 billion reside in these areas, and urban poor communities have stunting rates comparable to rural areas, while wealthier urban populations face rising obesity rates.[13]

A particularly striking finding from the HLPE-FSN report is the diminishing impact of food prices on diet quality as incomes rise. In high-income countries like the United States, over 95 per cent of people can afford a healthy diet, yet less than 10 per cent meet recommended dietary standards, and the country faces obesity rates of over 40 per cent.[14] Pervasive marketing of unhealthy foods and factors such as cooking, transport and storage costs are key drivers of poor dietary habits, according to the report.

Urban food systems are multi-dimensional and closely linked to poverty reduction, equity and climate action

Hunger and malnutrition in urban and peri-urban areas are not merely about whether there is food or if said food is affordable but are tied to a broader array of socio-economic factors, including social protection and access to services like sanitation and healthcare. This is particularly true in peri-urban areas in developing countries where internal migrants in search of a better life usually end up. These areas lack clean running water and have inadequate vaccination

[9] Christie L. Lumsden et al., "Critical Overview of the Implications of a Global Protein Transition in the Face of Climate Change: Key Unknowns and Research Imperatives", in *One Earth*, Vol. 7, No. 7 (19 July 2024), p. 1187-1201, https://doi.org/10.1016/j.oneear.2024.06.013.

[10] Melissa M. Lane et al., "Ultra-Processed Food Exposure and Adverse Health Outcomes: Umbrella Review of Epidemiological Meta-Analyses", in *BMJ*, No. 384, No. 8419 (March 2024), Article e077310, https://doi.org/10.1136/bmj-2023-077310.

[11] Based on a phone interview conducted on 21 August 2024.

[12] HLPE-FSN, *Strengthening Urban and Peri-Urban Food Systems*, cit., p. 18.

[13] Ibid., p. xvii and p. 22.

[14] Ibid., p. 61.

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ISSN 2532-6570
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coverage. All this affects the quality and quantity of food families eat and their nutritious status.

This necessitates policymakers and food systems experts to think holistically and also incorporate concepts such as "the right to food" and "the right to the city", according to food systems experts and human rights advocates.[15] Although the former is a well-known universal human right,[16] the latter is not as well recognised, but it refers to "equitable and inclusive access to goods and services [necessary] for a decent life"[17] and underscores the necessity of integrating food systems within broader urban development strategies. In this context, strengthening food systems requires addressing spatial, economic and infrastructural inequities that are prevalent in many urban areas.

Urban and peri-urban food systems are also poster children for how power imbalances shape dietary patterns. A major obstacle to achieving food security in these areas is the concentration of market power in the hands of large corporations with deep pockets and access to the corridors of power. Food systems experts say corporate control of how foods are produced, processed, transported and marketed allows large companies to set prices, focus on profitable products instead of those that meet nutritional needs and influence food policies in a way that will benefit them. This is a key factor undermining the ability of local governments to ensure food security.[18] This imbalance also marginalises local markets and informal vendors, which are essential for feeding the urban poor but do not have the economic, social or political clout to compete with these corporations. Despite this, local governments, particularly in urban settings, tend to support large corporations and often view local food producers and informal markets as inferior, less hygienic and problematic actors that need to be regulated and formalised.[19] This leaves urban consumers to rely on homogenous packaged foods that are high in calories but low in nutrients.

Finally, neglecting urban food systems could also stymie much-needed climate mitigation and adaptation efforts. Cities

[15] DESCA Observatory, *The Right to Food, Food Sovereignty, and the Right to the City: Advancing Co-Constructed Policies for Environmental Justice*, 9 July 2024, https://observatoridesc.org/en/node/5171; Danielle Resnick, "Urgent Need to Strengthen Local Governance for Improved Urban Agrifood Systems", in *IFPRI Blog*, 18 July 2024, https://www.ifpri.org/?p=150849.

[16] Office of the United Nations High Commissioner for Human Rights (OHCHR) website: *OHCHR and the Right to Food*, https://www.ohchr.org/en/food.

[17] HLPE-FSN, *Strengthening Urban and Peri-Urban Food Systems*, cit., p. xviii.

[18] Jennifer Clapp, "Concentration and Crises: Exploring the Deep Roots of Vulnerability in the Global Industrial Food System", in *The Journal of Peasant Studies*, Vol. 50, No. 1 (2022), p. 1-25, https://doi.org/10.1080/03066150.2022.2129013; Benjamin Wood et al., "Behind the 'Creative Destruction' of Human Diets: An Analysis of the Structure and Market Dynamics of the Ultra-Processed Food Manufacturing Industry and Implications for Public Health", in *Journal of Agrarian Change*, Vol. 23, No. 4 (October 2023), p. 811-843, https://doi.org/10.1111/joac.12545.

[19] Global Alliance for Improved Nutrition, *Informal Food Retail in Urban Areas*, 2020, https://www.gainhealth.org/resources/reports-and-publications/informal-food-retail-urban-areas; Bill Vorley, "Working with Informality: Constructive Ways to Transform Food Systems", in *IIED Working Papers*, May 2023, https://www.iied.org/21431iied.

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already account for 70 per cent of global carbon dioxide emissions[20] and that number is likely to increase as more and more people become urbanites. A key part of these emissions come from urban diets that have a much higher environmental footprint as a result of higher consumption of animal-sourced and ultra-processed foods. Livestock production causes the emission of methane, a potent greenhouse gas 84 to 86 times more powerful than carbon dioxide over a 20-year period, and nitrous oxide, the primary ozone-depleting substance approximately 270 times more potent than carbon dioxide. Meanwhile, processing and packaging use significant amounts of fossil fuels, either to produce plastics or run machinery.

As a result, urban diets contribute to rising emissions, which in turn accelerate wild weather patterns that increasingly threaten urban residents, precipitating a vicious cycle of vulnerability and loss. Urban areas are already extremely vulnerable to the convergence of climate change, poverty and inequality.[21] Solutions that can slash emissions need to be scaled up urgently. For example, food waste accounts for 6 per cent of total greenhouse gas emissions and when sent to landfills, emit methane.[22] So reducing this at household and retail levels in cities could go a long way in emissions associated with urban food systems.[23] Urban farming, particularly on rooftops, could also help lower temperatures and ensure there is fresh, locally produced food and indirectly reduce the production and consumption of emissions-heavy ultra-processed products.[24]

Pioneering cities are already leading the charge. Take Milan: its efforts to mitigate climate change by making its food system more sustainable and resilient through reducing food waste and loss won the city the inaugural Earthshot Prize.[25] Milan is also leading an international agreement of mayors from more than 100 cities, known as the Milan Urban Food Policy Pact, to implement holistic food policies at a city level.[26] In Argentina, the country's third-largest city Rosario turned to urban agriculture following

[20] Susmita Dasgupta, Somik Lall and David Wheeler, "Cutting Global Carbon Emissions: Where Do Cities Stand?", in *Sustainable Cities Blog*, 5 January 2022, https://blogs.worldbank.org/en/sustainablecities/cutting-global-carbon-emissions-where-do-cities-stand.

[21] UN Department of Economic and Social Affairs, *Majority of the World'S Cities Highly Exposed to Disasters, UN DESA Warns on World Cities Day*, 2018, https://www.un.org/en/node/94883.

[22] Hannah Ritchie, "Food Waste Is Responsible for 6% of Global Greenhouse Gas Emissions", in *Our World in Data*, 18 March 2020, https://ourworldindata.org/food-waste-emissions.

[23] Laura Collacott, "Transforming Our Food System Can Tackle Climate Change, and Cities Play a Leading Role", in *Ellen MacArthur Foundation Articles*, 11 November 2022, https://www.ellenmacarthurfoundation.org/cities-and-a-circular-economy-for-food/climate-article.

[24] C40 Cities, "Reducing Climate Change Impacts on Food Systems", in *C40 Policy Briefs*, 18 June 2020, https://www.c40knowledgehub.org/s/article/Reducing-climate-change-impacts-on-food-systems.

[25] Earthshot Prize, *From Waste to Welfare: How Milan's Food Waste Hubs Are Nourishing the City*, 18 August 2023, https://earthshotprize.org/?p=19195.

[26] See the official website: *Milan Pact*, https://www.milanurbanfoodpolicypact.org/?p=1110.

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the collapse of its former industrial economy to feed its hungry citizens, provide employment and rein in floods and fires that stem from erratic weather patterns.[27] It did this by allowing underutilised and vacant public lands to be turned into farms producing nutritious food and green spaces that help absorb excess water.

Reversing decades of neglect urban food systems have suffered offers pathways for a better future

Unfortunately, those examples remain few and far between. More often than not, local and national governments have neglected local food webs, marginalising them in favour of industrial agriculture and global trade. This has left local food webs without access to basic services like clean water and sanitation, and many smallholders struggling to access finance, infrastructure and formal support, and to compete with large retailers.

There are multiple ways to change this dynamic: concerted support from all levels of government, empowerment of local authorities, infrastructure development, policy changes, and a shift in mindset on both urban food systems and local, informal food webs.

With the majority of food now being consumed in urban areas, there is a pressing need for national governments to acknowledge and respect the role of local authorities in addressing not only food and nutrition but also inequality and climate action.

To empower local governments, national authorities should increase the formers' capacity through funding and grants, and helping to integrate food systems into urban planning frameworks.[28] Food systems experts are also advocating for investment in multilevel governance processes that empower cities to act on food system challenges, especially in slums and peri-urban areas where food insecurity is most acute. They also say governments can support informal food markets and producers by linking them with public food procurement programs, such as school meals or hospital nutrition.

Brazil has successfully done aspects of both.[29] It invited all levels of government (federal, state and municipal) to participate in the construction of a National System for Food and Nutrition Security, and enacted a federal legislation that requires 30 per cent of funds to be spent on purchases from small family farms. Both strategies reduced hunger and malnutrition.

Food systems experts are also urging local governments to work together with civil society groups and the private sector to reform and improve policies on land use, infrastructure investment, public procurement, and support for local markets. For example, the UK Sustainable Food Places, which fosters

[27] Anne Maassen and Madeleine Galvin, "Rosario, Argentina Uses Urban Farming to Tackle Economic and Climate Crises", in *WRI Insights*, 21 June 2021, https://www.wri.org/node/100757.

[28] FAO and ICLEI, *Sixteen Urban Food Systems Dialogues for the UN Food Systems Summit. Synthesis Report*, August 2022, https://doi.org/10.4060/cc0309en.

[29] James Tefft et al., *Urban Food Systems Governance*, cit.

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partnerships across public, private and civil society sectors, now covers about two-fifths of the total UK population and is looking at longer-term and more sustainable strategies to deal with food poverty.[30]

Upgrading the infrastructure of existing local markets such as cold storage, waste management (including access to clean running water) and transportation networks will improve the safety and sustainability of local and informal food webs.

Policies such as setting up formal structures to access loans and advisory services could also shore up local food producers. Decisions on land-use and zoning can either limit urban agriculture and disrupt local markets or protect peri-urban farmland, encourage community gardens and rooftop farms that double up as green spaces, and integrate food needs into town planning.

Local and national governments should lead these efforts, especially when it comes to empowering and investing in local authorities and enacting inclusive policies, but multilateral organisations such as the UN have a special coordinating and advisory role to play. The breadth and depth of their experience in facilitating collaboration across different sectors and levels of the government, providing technical expertise and promoting best practices will be particularly useful to nudge developing nations into undertaking systemic reforms around urban food systems.

A paradigm shift is urgently needed both in how food security is addressed in urban and peri-urban areas and how investments are currently being made in food systems. Resilient, equitable and sustainable urban food systems capable of withstanding future shocks are needed now more than ever. Not only are they necessary to address the immediate food and climate challenges of today but also to build a more just and inclusive global system for the future.

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[30] Mat Jones and Sarah Hills, "Remaking Local Food Systems. Progress and Prospects for UK Local Food Partnerships", in *Sustainable Food Places Evaluation Reports*, November 2023, https://www.sustainablefoodplaces.org/news/dec23-remaking-local-food-systems.

ISSN 2532-6570

ISSN 2532-6570

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