URBAN AGRICULTURE
MAGAZINE

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Gender in Urban Food Systems

URBAN AGRICULTURE MAGAZINE

CITIES, FOOD AND AGRICULTURE: CHALLENGES AND THE WAY FORWARD

RUAF WORKING PAPER NO 3

Urban Agroecology

RUAF Foundation

Henk de Zeeuw and Marielle Dubbeling

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Rural-
link

Welcome to the first issue of the Urban Agricultural Magazine

Food Planning in Garden Cities: The Letchworth Legacy

the Integration of
Peri-Urban Agriculture into P

20+ years of
RUAF

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City Region
Food Systems

RUAF

In this issue

Over the past twenty years RUAF has contributed to the advancement of urban agriculture and urban food systems transformation through research, action and advocacy, and through knowledge brokering between science, policy and practice. In this issue, the RUAF Secretariat and RUAF Partners reflect on the work done to support the development of sustainable and resilient urban and peri-urban agriculture and city region food systems, and identify five main focus areas on urban food systems for the coming decade: Resilience, Social inclusion, Urban and Peri-urban Agriculture, Urban Planning, and Governance. Each section consists of articles, opinion pieces, boxes, case studies, conclusions and resources written by RUAF Partners and collaborators.

Resilience

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Food systems around the globe are highly vulnerable to the impacts of multiple hazards, including climate shocks, natural events, global warming, and political instability. People, assets and infrastructures are vulnerable throughout food supply chains, from production to consumption and waste management, and the natural resources and ecosystem services on which they depend. This section reflects on the concept of resilience and vulnerabilities of food systems, including in the context of the COVID-19 pandemic. It looks into the experiences from the ground in Antananarivo, Quito, Melbourne and St. Vincent and the Grenadines, drawing some conclusions on the need for sustained, ambitious, and expanded efforts to build urban and city region food system resilience.

Social Inclusion

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Social inclusion is the process of improving the opportunities and ability for participation of disadvantaged individuals and groups in society, and improving the terms of engagement. This section discusses the right to food, justice and interventions on inclusion and enhancing agency. It looks at the informal sector and the need to properly understand and collaborate with the food system of the majority. It explores recent and ongoing work to put citizens at the centre of food system changes, reporting on experiences such as food change labs and local food councils. The section also looks at the inclusion of forcibly displaced persons in urban food systems, and the role that urban and peri-urban agriculture (UPA) can play in different circumstances.

Urban and Peri-Urban Agriculture

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Over the past few years, Urban and Peri-urban Agriculture (UPA) has gained increasing attention. The disruption of urban food systems during the COVID-19 pandemic has emphasised the importance and added value of (re-)connecting local food production and consumption, and the importance of easy access to healthy and nutritious food. UPA is a shifting form of urban land use while consistently being part of city development, and contributes to food security as a complement to rural farming – as well as bringing other social and environmental benefits. This section analyses urban agroecology, regeneration and circularity, as well as inclusive food value chains in and around cities, and the role and potential of UPA in food systems transformation.

Urban and Regional Food Systems Planning

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Climate change and the COVID pandemic highlight the pressing need to rethink and build local supply and food distribution channels. Cities and their hinterlands need to build food sovereignty, and increase accessibility and affordability of nutritious food, especially for the excluded and the poor. Food planning is gradually being considered by cities, but existing knowledge and emerging practices need to be shared and used to train all types of actors involved in, and concerned about, food. This section illustrates some of the solid first steps taken by various actors and cities and explores the way ahead.

Governance

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Governance of urban food systems is critical. It is the bedrock on which all policies, projects, programmes and interventions are built. Actions to strengthen or transform urban food systems flourish or fail on the strength of their governance arrangements. This section examines the different meanings of governance. It also provides an overview of urban food governance discussions and draws on examples and best practices from cities in different parts of the world, including Nairobi, Surabaya, Bristol, and Toronto.

Celebrating 20 years of advancing urban food systems transformation

RUAF Secretariat

2020 marked the 20th anniversary of RUAF and the Urban Agriculture Magazine. In 2020, we embarked on the ambitious task of developing this special issue with our partners as a platform for continuing our tradition of setting the agenda for urban agriculture and urban food systems.

Over the past two decades, RUAF staff, partners and wider collaborators have played a leading role in advancing urban agriculture and urban food systems transformation through action and advocacy, and through knowledge brokering between science, policy and practice: all 'learning by doing'. The sections, articles, opinions and boxes in this issue look back, take stock, and identify emerging topics to be addressed by RUAF with cities, local and international organisations and research institutes over the decade to come. More than that, they propose promising approaches for doing so.

The RUAF Partnership

The illustrious history of RUAF is summarised in the next article by the former RUAF board members and illustrated in the accompanying graphic. Indeed, RUAF started as a project with a focus on networking and stocktaking, policy influencing and building regional resource centres. After 2004, when the RUAF Foundation was founded to coordinate the work of the RUAF partners and its programmes, RUAF intensified its collaboration with cities by developing tools on multi-stakeholder action planning and policy change (MPAP), monitoring, and by supporting urban farmer organisations. RUAF supported enhancing the capacity of a wide variety of actors in 25 cities across the globe. Alongside these larger programmes, a number of other projects were developed, using the experiences gained and tools designed, based on the multiple functions of UPA in sustainable cities. This included work on water and waste management, on resource recovery and re-use (led by IWMI), on emphasising the role of UPA following crisis situations in projects in Liberia, Sierra Leone, Gaza and Jordan, or in other projects on exploring the role of UPA in environmental management and in climate change adaptation and mitigation.

Today, the RUAF Global Partnership on Sustainable Urban Agriculture and Food Systems is a community of practice involving cities, research institutes and NGOs, forming expert institutions with a significant track record in urban and peri-urban agriculture and urban food system solutions, that develop, apply and share innovations. RUAF

supports the development of sustainable and resilient urban and peri-urban agriculture and city region food systems. This is achieved by creating, sharing and using knowledge, expertise, practices and innovations to improve action-research and practice, to advise on policy and to build the needed capacity in governments and other organisations, including food producers, processors and vendors. Guided by its Strategic Plan, RUAF works with cities and city networks, including MUFPP, ICLEI and several others, to strengthen the role of cities in food policy governance.

The current RUAF Partners are the International Water Management Institute (IWMI) based in Colombo, Sri Lanka; the Institute of Geographical Sciences and Natural Resources Research of the Chinese Academy of Sciences (IGSNRR/CAS) based in Beijing, China; the Centre for Sustainable Food Systems, Wilfrid Laurier University in Canada; the City of Toronto, Canada; the City of Ghent, Belgium; CONQUITO, the Economic Promotion Agency of the Municipality of the Metropolitan District of Quito; and the NGOs Economia e Sostenibilita (ESTA) from Milan, Italy; Mazingira Institute, Nairobi, Kenya; Rikolto, Belgium; and Hivos from the Netherlands.

For the past twenty years, RUAF has engaged with over 100 local and international organisations and worked in 50 cities in over 40 countries. The RUAF Global Partnership and its Secretariat have supported local and subnational governments, urban producer organisations, NGOs, CBOs, research centres and other stakeholders with training, technical assistance, action-research and policy advice, and advised various UN and other international organisations. The Partnership, through its Secretariat, synthesises its local, national and international knowledge exchange, advocacy and learning activities and disseminates these online through the Urban Agriculture Magazine (UAM), RUAF papers and updates, and through publications, as well as at international meetings and events.

Looking Forward

The RUAF partner cities are recognised as being among the pioneers in food systems work. In the coming years, RUAF will continue to support these and other cities in their ongoing work to build resilient and sustainable food systems with their local and regional networks and in cooperation with rural and peri-urban parts of their wider city regions.

Over the last 20 years, many more cities around the world have implemented actions to enhance food security, nutrition and social justice, and to reduce the environmental impacts of the food system, many becoming members to the Milan Urban Food Policy Pact. At the same time, the international field of food systems work has expanded. Each year, more international organisations join and explore new or similar pathways. This growing interest, by both cities and NGOs, is to be celebrated: it brings new opportunities for collaboration and projects. It also requires careful positioning to ensure that the efforts by many players are complementary and coherent.

What is more, this activity is taking place in what is perhaps a tipping point for life on our planet. The COVID-19 pandemic has shown how vulnerable the global food system is: climate crises are becoming more frequent, we are living in a time of great unpredictability, and transforming this system is ever more urgent. In this process of transformation, informing and building capacity, understanding food systems, systems thinking and supporting frontrunners and leaders to guide and implement real change remains critically important. Food is important in our daily lives: it connects people, cities, regions and sustainable development goals. We have to understand where our food comes from and connect with others in answering the question "what type of food system do we want" if we are to create lasting positive global change and build resilient city region food systems.

UPA and food are appearing on many varied political agendas ranging from economic development to environment, biodiversity, climate change, social inclusion and waste management. This provides an opening to address such issues in an integrated way. Building resilience is not a simple task that can be achieved in a single project, rather it requires long-term and continued support to multiple stakeholders, re-shaping governance and rechannelling funds, integrating sectors, building agency, and together trying out new things.

2021 – a crucial year for food systems

2021 saw the UN Food Systems Summit (UNFSS) set the stage for global food systems transformation to achieve the Sustainable Development Goals by 2030, and has led to a large number of coalitions and initiatives. RUAF and partners convened a working group to help gather game-changing solutions and develop a series of key messages addressing systemic and multilevel governance, equity and inclusion, integrated local food planning, school nutrition and procurement, healthy food environments, food waste and emerging planning responses and recovery. Coalitions for action will need to be transparent and take account of the long-acknowledged key elements of food systems change, namely food sovereignty, gender justice, climate justice, economic and social justice, biodiversity, and people's and planetary health. In addition, the COP26 summit in Glasgow identified the important link between climate and food, and the need for integrated approaches.

RUAF and its partners have to build on the outcomes of both the UNFSS and COP26 when looking to the future and in developing its new strategy for the next decade.

As we stand on the threshold of an exciting and challenging era for food systems transformation, RUAF, in keeping with its reflexive approach, is currently undergoing a new evaluation to establish how best to continue supporting the urban food system phenomenon in a rapidly changing world.

RUAF's future development will be based on the recognition that "(...) the RUAF brand is well known and guarantees a broad worldwide network and high quality work on urban agriculture and sustainable urban food systems. (...) The strength of RUAF lies in identifying and exploring new issues regarding urban food systems, raising awareness of that and building knowledge around it. (...)".

Hence, RUAF will continue developing and adapting to internal and external changes, building experiences and introducing innovations. These include transitioning into a think tank and knowledge centre, supporting its main partners in developing larger programmes based on their expertise and drawing on its wide network of associates, and facilitating cities to share knowledge and build their networks.

To remain ahead of the curve, we will continue to identify emerging needs, threats and gaps in urban food-systems work in relation to the climate crisis. Here we see agroecology, building agency and food and climate justice as vital components of transforming food systems.

Here we will draw on our experiences with working with front runners, MS approaches, CRFS, MUFPP Indicators etc. The work on indicators is now used as a reference for the field, and the CRFS programme with FAO provides a clear and practical process for building resilience. Work in these areas will naturally continue as we find new needs and approaches through ongoing and new projects, programmes and technical assistance.

This UA Magazine

In developing this '20 years of RUAF' UAM issue, we identified five key work areas for the coming decade: Resilience, Social inclusion, Urban and Peri-urban Agriculture, Governance, and Urban Planning. Each theme is addressed in its own section of the magazine with articles, opinion pieces, boxes, case studies and resources written by RUAF partners and collaborators, followed by a summary of pressing needs and priorities.

This magazine is not the end of this process. It is just the start of RUAF's journey as we help cities and city regions navigate the challenges that they face through this decade of transformation and beyond. We hope many of our readers will join us on this journey, through collaborations, discussions, knowledge sharing and mutual support in our endeavours.

In Memoriam
Marielle Dubbeling

17/12/1968 – 23/10/2019

Many of us have worked on this issue of the UA Magazine: RUAF 20+ years, with Marielle Dubbeling in our minds.

Marielle was co-founder of the RUAF Foundation, of which she was the Director from 2012, and a driving force of the RUAF Global Partnership. She propelled the further development of RUAF and led many of its international programmes, studies and projects. Marielle was recognised internationally as a leading expert in urban agriculture and city region food systems, who had significant and long lasting impacts on urban policies, as well as on research and education in this field. Throughout her career, Marielle was always developing new insights and approaches through innovative research and development projects. She worked across many themes, as reflected in her impressive publications list (see www.ruaf.org).

On 23rd October 2019, Marielle passed away, leaving us with a great void – emotionally, socially, and in our work ahead as we had just entered a period of organisational transformation.

But she also left us with projects, new ideas and leads, and a tradition of putting RUAF ahead of the curve. The Partners expressed the unanimous commitment to build on Marielle's legacy in urban agriculture and food systems, in her memory and honour, with everyone around the world who was inspired by her.

Marielle is remembered as a unique individual; a spiritual person of integrity and uncompromising values; an influential thinker; a supportive and stimulating colleague and tutor; a steadfast leader; and, above all, a friend.

This magazine is dedicated to Marielle.

RUAF: Rooted in cities
Over 20 years in urban agriculture and urban food systems

Put agriculture on the urban agenda
RUAF is founded in response to demand from international donors to respond to increased urbanisation of poverty and food insecurity.

1999

Support local action and policy
With its *Cities Farming for the Future* programme, RUAF, now an independent Foundation, supports local action in over 20 cities with 100+ local partners, and influences local policies.

2005 - 2008
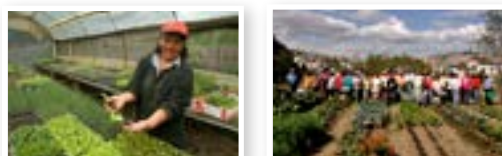
Align strategy with local government interest
RUAF's network is converted into a true network and renamed as *RUAF - Global Partnership on Sustainable Urban Agriculture and Food Systems*.

2014

Leverage international change
RUAF supports the City of Milan in drafting the Milan Urban Food Policy Pact (MUFPP), signed by 225 cities by the summer 2022.

2015

City to City Exchange
ICLEI and RUAF launch the CITYFOOD Network to accelerate local and regional government action on sustainable and resilient city-region food systems.

2017

RUAF identifies key themes for future attention in the urban food systems field, which are explained in UAM 38, and develops new programmes.

2022

2000

Create knowledge resources
RUAF launches Urban Agriculture Magazine to exchange policy views, practical experiences, and research results on urban agriculture and urban food systems.

2009 - 2011

Develop value chains
With the *From Seed to Table* programme, RUAF and partners strengthen urban farmer organisations through training in farming systems innovation, micro-entreprise and value chain development in 17 cities and 7 regions.

2015 - 2018
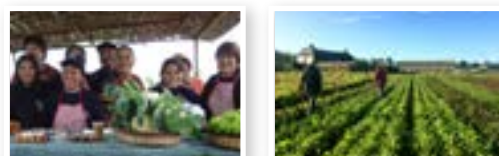
Build an evidence base
RUAF grows its portfolio on climate change, city region food systems, indicators and tools, and circularity, to support strategy and action planning for more resilient food systems.

2016

New Urban Agenda
RUAF supports successful efforts for the inclusion of urban food security and urban agriculture in the *New Urban Agenda*, the guiding document on sustainable urbanisation for the next 20 years.

2019 - 2022

The RUAF Secretariat is hosted by Hivos. RUAF supports a systemic approach to feeding cities by promoting the need to integrate food and agriculture in our cities of today and tomorrow on the urban development agenda. RUAF is involved in events surrounding the UN Food Systems Summit and follow up activities, including the Urban Food Systems Working Group convened by FAO and GAIN.

The RUAF Collective since 1999 –
A Remarkable Journey

Luc Mougeot
Frans Verberne

Nothing like it had been seen before: a global collective of science, government and civil society organisations, mobilising to support urban agriculture (UA) at a time when this was still an oxymoron for many.

This daring venture came about following two United Nations sponsored global field assessments of the gathering phenomenon while, at the same time, Canada's International Development Research Centre (IDRC) had been developing a portfolio of applied research on UA in various world regions since the mid-1980s.

Yet, RUAF was no short-sighted accident: its evolution coincided with growing international attention to the extent and values of UA and RUAF would effectively help to position UA at major global development summits, such as United Nations' Habitat Conferences and World Urban Forums, and its World Food and Food Systems summits.

As RUAF expanded and matured over its first decade, member organisations and project associates were increasingly called upon by major development agencies and networks to inform new programmes, including by the World Bank, the United Nations Environment Programme, the Food and Agriculture Organization, Local Governments for Sustainability, the CGIAR Partnership, regional and national federations of municipalities and local governments, and regional development banks.

Throughout its evolution, RUAF would prove itself to be nimble, always remaining viable and relevant. At critical junctures, changes in its structure, governance and business model would go hand-in-hand with shifts in thematic focus.

1999-2004: Building a global network of regional resource centres
The RUAF - Resource Centers on Urban Agriculture and Forestry initiative effectively launched in 1999, as a major and lasting outcome of the international Support Group on Urban Agriculture convened by IDRC in Ottawa in 1996. Led by ETC Foundation (the Netherlands), its two initial core funders were IDRC and the Dutch Government. Given the 1996 Habitat III Conference's heightened attention to urban sustainability, RUAF's funders saw UA as a new field where they could complement each other, through both supporting multidisciplinary research for actionable results (IDRC), and practical cross-sector interventions (Dutch Government). The founding membership was selected mostly from among IDRC's UA research grant recipients.

Over the first five years, the RUAF network would broaden its focus, from building a network for documentation and sensitisation, to strengthening capacities, and supporting policy and action planning.

2004-2012: The RUAF Foundation
In 2004, the RUAF network became an independent non-governmental organisation, for policy innovation on urban agriculture and food security, with its own governing body - the RUAF Foundation – staffed by employees of member organisations subcontracted to the Foundation. The network itself was re-named *RUAF Resources Centers on Urban Agriculture and Food Security*.

Over this period, RUAF expanded its geographical reach and scale of its activities, particularly through its *City Farming for the Future* (CFF, covering 20 cities and over 100 local partners) and *From Seed to Table* (FS2T, 17 cities in 7 world regions) programmes. The CFF included tailored stakeholder training and innovative policymaking and action planning in diverse contexts. Policy formulation protocols that integrated UA into spatial planning and financing mechanisms mobilised the expertise of the RUAF collective in response to local governments' expressed needs and following issuance of its *Guidelines for Municipal Policymaking*. FS2T supported urban producer organisations with farming innovations, micro-enterprise and value chain development. The results were captured in RUAF's two books *Cities Farming for the Future* and *Cities, Poverty and Food*.

After the 2008-9 financial crisis, official development assistance's engagement with civil society changed, making it more challenging to compete for major grants against large institutions with secure core funding. RUAF saw this as a good time to revisit its niche since organisations engaged in rural agriculture or urban development were now embracing a "food in cities" agenda.

2012-2019 The Global Partnership
The work of the RUAF Foundation in 2012-13 laid the groundwork for a substantial transformation over the rest of the decade, in particular members assessed their own commitment to the network in light of their changing management and priorities. Up to 2012, the Foundation had a one-tier board of nine members who appointed a director. Reflection on its effectiveness led to a smaller Board of three independent experts. In 2013, the new organisational structure was approved by the RUAF members, as well as a more deliberate approach to recruiting new members and growing the Network.

In 2014, the RUAF Foundation convened a new Board of Trustees to oversee the transition of the Foundation and its network to a new model. The refreshed membership was convened in 2016. The renamed RUAF - *Global Partnership on Sustainable Urban Agriculture and Food Systems* successfully converted its network into a true partnership, with the RUAF Foundation serving as a secretariat. Current members are more diverse and bring new expertise to urban food system policy and planning, going beyond UA itself. They also better represent the global reach and multi-sectoral mission of RUAF (with 3 local governments, 3 research organisations and 4 NGOs).

Back in 2015, RUAF had collaborated in the foundation of the *Milan Urban Food Policy Pact* (MUFPP), with FAO and other partners. Now signed by over 215 cities worldwide, the MUFPP is becoming the most important community of practice for healthier, more equitable and sustainable urban food systems.

The RUAF Global Partnership's record over this period demonstrates its acquired credibility and position in influencing major conversations on cities' social, economic and environmental sustainability. For instance, with the Climate and Development Knowledge Network, a **framework** has been established to monitor impacts of urban and peri-urban agriculture and forestry on climate change and adaptation (with evidence informing new policies worldwide); and, with ICLEI, **interventions** have been made addressing urban resilience. With the Carasso Foundation and FAO, RUAF have operationalised the concept of **city-region food systems**, and a **methodology** to map and assess such systems in selected cities worldwide. With the SDC and OXFAM in Gaza, and with WHH, CARE and Coopi in Liberia and Sierra Leone, RUAF has developed **short food chains** in urban and peri-urban areas. RUAF, with Erasmus-plus and Ryerson University, have established a **curriculum** for skill development, knowledge exchange and innovation among SMEs, policymakers and HEIs. Through the DGIS-funded WASH Alliance and IWMI knowledge gained from work with RUAF, **business models** and **pilots** for sanitation interventions on different scales (household, schools, public areas, central systems) have been developed. With the World Bank, **metrics** to appraise the impact of urban food policies on various development dimensions have been established. Over the period 2016-2019, RUAF formed a strategic alliance to enhance its impact on urban sustainability.

In 2019, RUAF's Secretariat and Board successfully transferred the Secretariat to a larger NGO, HIVOS (Humanist Organization for Social Change), whose values, mission and reach align with those of the *RUAF Global Partnership*. As such, contracting, maintaining the website and other tasks are now handled within a larger organisation that is very active in the Global Partnership's field of interest. The RUAF Foundation was therefore terminated in 2020 and the RUAF Secretariat's early experiences with its new host were reviewed in 2021 with follow-up recommendations pending.

At the Fifth Annual Meeting of MUFPP in Montpellier, France, in 2019 RUAF was present in a number of activities that demonstrate its relevance: launching a *Urban Agriculture Magazine* on Food Policy Councils, developed by RUAF with Hivos; showcasing its work on MUFPP Indicators Framework (and adding a gender lens); and its collaboration with the Global Alliance on Nutrition (GAIN) on the Menu of Actions on Food Environment.

Thus, for now more than two decades, thanks to the steadfast leadership from its directors, partners, associates and trustees, RUAF has managed to position itself, grow and diversify, adapt and transform. It has leveraged its original focus on UA to develop a more systemic approach to feeding cities. In doing so, it is contributing in no small measure to keeping the need to integrate food and agriculture in our cities of today and tomorrow on the urban development agenda. Several red-threads emerge from RUAF's experience over the years:

- the food sub-sector remains a prime entry point into UA and its multiple functions, reflecting the prominence of food security and sovereignty concerns in the wider world;
- multi-stakeholder policy formulation and action planning remains a proven and preferred approach to robust interventions;
- government leadership is still key to the deployment of innovations;
- and bottom-up knowledge generation and higher-order systematisation of worldwide experiences are essential ingredients in offering credible policy advice.

In order to improve inclusion and wellbeing, and wealth and resilience for all, without which there cannot be a better urban future, we expect RUAF to deepen its think-tank status and continue to use multi-sector engagement, generate knowledge on different scales and for diverse audiences, advise and influence powerful actors, and bring lessons to bear on global conversations. This edition of the UAM explores the ways forward for the RUAF collective over the coming crucial years to forge real food systems transformation.

Luc J.A. Mougeot, Member of the board of the former RUAF Foundation (2014-2020); author, editor, reviewer and scientific advisor on urban agriculture.

Frans Verberne, Chair of the board of the former RUAF Foundation (2018-2020), now senior coalition builder at Netherlands Food Partnership.

Credits: ©FAO/Granma

Resilience

Urban and city region food systems in peril: the case for urgent action

In the third decade of the 21st century, the world faces unprecedented major challenges. Sudden climate shocks – such as hurricanes, floods, and extreme temperatures – and prolonged stresses such as droughts, are occurring with an alarming increase in regularity, while global warming causes complex feedback loops that affect the intensity and impacts of other natural events, such as volcanic eruptions and earthquakes. COVID-19 still stalks the earth, and the UN predicts more pandemics to come due to humans' exploitative interactions with nature. Political instability is rife, disrupting communities and economies and driving refugees to seek sanctuary across borders.

Credits: ©FAO/Farshad Usyan

Defining resilience to multiple shocks and stresses in the context of city region food systems

Roman Malec
Guido Santini
Jess Halliday

Food systems around the globe are highly vulnerable to the impacts of these hazards; people, assets and infrastructures are vulnerable throughout food supply chains, from production to consumption and waste management, and the natural resources and ecosystem services on which they depend.

Densely populated urban areas are dependent on outside food sources. Impacts on any supply chain node can reverberate through urban and city region food systems, and thus have a dramatic effect on food and nutrition security, livelihoods and economic development, and social equity. Rapid urbanisation (particularly in Africa and Asia) only increases the pressure; there are more mouths to feed, and many new arrivals reside in informal

settlements where basic services, viable livelihoods, and access to safe, affordable, nutritious food are lacking.

Shocks and stresses of all forms have a disproportionate impact on the most vulnerable people, including marginal farmers, informal marketers, female heads of household, elderly, unemployed and disabled people, and others. The impacts of each shock or stress can magnify and compound those of previous crises.

Within this unstable context, there is an urgent need to build urban and city region food systems that are both sustainable and resilient to all challenges they may face.

The concept of resilience is often defined as the capacity to withstand, absorb, or 'bounce back' from the impacts of a shock, but this is only part of the story. Resilience-building also requires preventive and anticipatory actions to reduce risks and their impacts, actions to adapt to them and, when the structures and processes that sustain a system are no longer tenable, transformative actions. With current global, national and local food systems facing growing risks and uncertainties from multiple threats (such as climate change, conflicts and pandemics), there is an urgent need to build all resilience capacities together within city region food systems.

The common resilience discourse[1] refers to resilience-building as a process for strengthening five key capacities within and across sectors to enable stakeholders to *build forward better*.

1. Preventive capacity: The ability to implement activities and take measures to reduce existing risks and avoid the creation of new risks. While some risks cannot be eliminated, preventive capacity aims at reducing vulnerability and exposure in certain contexts where, as a result, the risk is reduced.

2. Anticipatory capacity: The ability to take early action in anticipation of a hazard to reduce its potential negative impacts, including through access to early warning systems, and forecast-based financing of risk-reduction measures.

3. Absorptive capacity: The ability to take protective action and 'bounce back' after a shock using predetermined responses, such as risk insurance and shock-responsive, risk-specific social protection to preserve and restore essential basic structures and functions. This involves anticipating, planning, coping and recovering from shocks and stresses.

4. Adaptive capacity: The ability to make incremental adjustments or modifications to the infrastructure, practices and interactions to moderate potential impacts, in order to continue functioning without major qualitative changes in function or structural identity.

5. Transformative capacity: The ability to create a fundamentally new system when ecological, economic or social structures make the existing system untenable. Transformative capacity is required when the change needed goes beyond the system's preventive, anticipative, absorptive and adaptive abilities and when there is recognition that people continue to be trapped in a vicious circle of poverty, disasters and conflict.

[1] Adapted from the UN Common Guidance on Helping Build Resilient Societies: Final Advance Draft - September 2020. https://www.sparkblue.org/system/files/2021-07/UN%20Resilience%20Guidance_Final_6%20Oct_no%20foreword_0.pdf.

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Credits: ©FAO/Opeyemi Olagunju

Importantly, resilience capacities at different levels (i.e., at the individual, household, community, city, subnational, national, regional and global system levels) can interact and influence each other. For example, strong transformative governance capacities at the national level that recognize the importance of locally-led territorial approaches for building resilience can also have positive effects on local city governments, leading to stronger integration and coherence between multiple levels of governance. Weak early warning capacities at the national level, on the other hand, can trigger city governments to invest in local capacities to increase anticipatory action. Capacities are also influenced by levels of income and education, social-cultural norms and prevalent gender inequalities of the people whose livelihoods depend on food systems.

Resilient city region food systems

It is predicted that 68% of the world's citizens will live in urban areas by 2050, compared with 55% in 2018, with over 90% of that increase expected in developing countries. While investments in building resilience capacities and addressing the root causes of vulnerabilities are needed at the global scale, it is people who depend on local food systems in developing countries who are most at risk. This is also where the demand for food and essential services is growing disproportionally, along with rising levels of malnutrition and pressures on national social, economic and environmental resources.

In a diverse risk landscape such as the city region food system (see box p. 16), the combination of climate change and other hazards – including those related to COVID-19 containment measures – has exposed significant vulnerabilities.

There is an urgent need to enhance the resilience of city region food systems, where local food systems are understood as embedded in a complex and interdependent rural-urban continuum and where the disruption to one part of the system can have knock-on effects in other parts. For instance, if distribution channels are impacted by a hazard (e.g. flooded roads, fuel shortages), the production node will be affected as farmers will have no means to get produce to market. Post-harvest loss of perishable produce will lead to more food and organic waste. Markets and consumption will also be affected by food shortages, prices will increase, and many people will not be able to afford staple food items.

Some example of resilience capacities of city region food systems are:

- Through extension services, farmers have had access to training on terracing, enabling them to adapt in advance of future flooding events (prevention).
- Farmers have access to early warning systems and are able to harvest crops before adverse events and move animals to safety (anticipation).

- Government has a high eligibility threshold for disaster relief funds, meaning farmers have assistance to help them cope with the impacts of a hazard (absorption).
- Warehouse operators receive insurance payments to compensate for lost stocks; traders who lost business premises can share others' facilities (absorption).
- Market traders with IT skills and access to the internet are able to pivot their businesses, using apps or online tools to get food to customers directly (adaptation).
- Retailers have set up multiple supply chains for produce, meaning they have the capacity to continue trading if one supply chain is interrupted (prevention).
- Smallholder farmers adding value to their produce to generate additional income, and organising to develop a speciality value chain that allows them to set prices and market conditions (transformative).

What can governments do?

- Local governments and food system stakeholders can create the basis for resilience building through mainstreaming food systems in local development, urban and territorial planning, disaster risk reduction and resilience plans, strategies and policies on the one hand – and on the other hand by including risk reduction and resilience-building in local agriculture and food plans, strategies and policies.
- National and local governments should participate in inclusive and people-centred multi-stakeholder platforms (such as local food policy councils) to assess and understand the multiple risks faced by city region food systems and identify vulnerabilities, and then plan actions to address them.

- Municipalities within a city region should form networks to coordinate actions across rural and urban areas and to better align supply and demand of specific commodities, including identifying alternative value chains during crises (see examples from Quito, Medellin and Colombo in the article by Alison Blay-Palmer, p. 16).

Multi-risk and crisis management that facilitates resilience building can help address the challenges faced by contemporary local food systems. The approach presented here considers resilience to be about reducing vulnerabilities, managing risks and eventually creating thriving systems that are better equipped to face uncertainties and able to *build forward better*. As such, it can enable local food system stakeholders to design, adopt and implement policies, plans and investments for resilient, inclusive and sustainable city region food systems transformation. This, in turn, can advance work towards transformation of national, regional and global food systems.

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City Region Food Systems and resilience: lessons from COVID-19

Alison Blay-Palmer

As we move through the waves of the COVID-19 pandemic, the vulnerabilities of our fundamental systems, including food, have been exposed. How we emerge from this pandemic will set the stage for managing future crises, shocks and hazards, including climate change, and in some cases point to opportunities to increase resilience. Alison Blay-Palmer explains how the City Region Food Systems approach can enable knowledge creation, and capacity and network building that increase resilience.

The need to increase resilience is especially urgent in the case of food systems. Given the corporate capture of international spaces such as the UN Food Systems Summit and the ongoing lack of attention to human rights, we need to identify spaces where we can shift the power dynamic. The City Region Food Systems (CRFS) approach offers a ground-level entry point to address these challenges and a way to build resilience. As we celebrate the 20th anniversary of RUAF, the CRFS approach is a reflection of the vision and relevance of work by RUAF and its partners in coming together to find sustainable solutions through food.
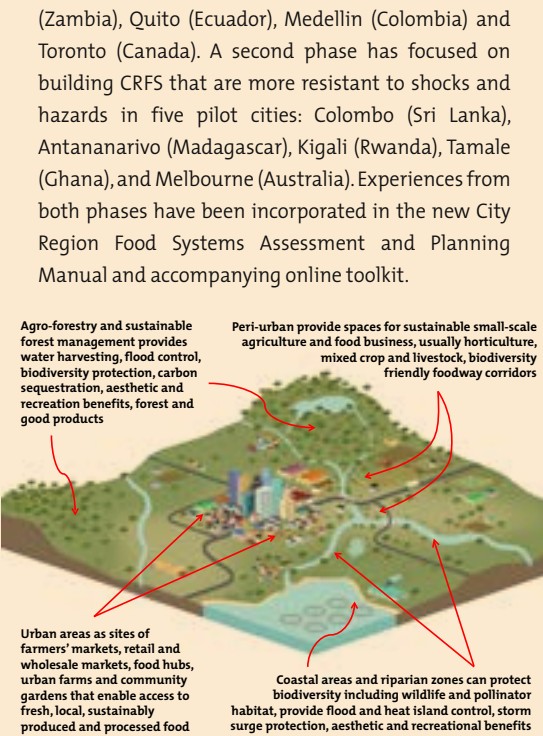
Lessons learnt from COVID-19: The road to more sustainable, resilient food systems

With increasing food insecurity, income disparity, forced migration, precarious livelihoods, decreased access to land and declining ecosystems, we need to rethink how people have access to food. While not the only answer, there is increasing evidence that the CRFS approach offers tools

What are City Region Food Systems?

The City Region Food Systems (CRFS) approach was developed by RUAF, with the Wilfrid Laurier University Centre for Sustainable Food Systems, the CGIAR Water Land and Ecosystems (WLE) programme and the UN Food and Agriculture Organization (FAO). The CRFS approach allows us to understand food system assets in a holistic and integrated way, and to see how they can be improved to build sustainability and resilience. Based on multistakeholder, multiscale collaboration and on system-centred planning to develop coherence across the rural–urban continuum, it can help enable viable local livelihoods and deliver food and nutrition security. The city region scale links actors across rural, peri-urban and urban spaces within a region, and allows us to see them as part of a coherent and integrated food system that is supported by multiscale policies and programmes from the national down to the local level (Blay-Palmer et al., 2018, 2021).

The first phase of the CRFS programme developed and piloted a process for assessing and planning the sustainability of city region food systems in six city regions: Colombo (Sri Lanka), Kitwe (Zambia), Lusaka (Zambia), Quito (Ecuador), Medellín (Colombia) and Toronto (Canada). A second phase has focused on building CRFS that are more resistant to shocks and hazards in five pilot cities: Colombo (Sri Lanka), Antananarivo (Madagascar), Kigali (Rwanda), Tamale (Ghana), and Melbourne (Australia). Experiences from both phases have been incorporated in the new City Region Food Systems Assessment and Planning Manual and accompanying online toolkit.

Agro-forestry and sustainable forest management provides water harvesting, flood control, biodiversity protection, carbon sequestration, aesthetic and recreation benefits, forest and good products

Peri-urban provide spaces for sustainable small-scale agriculture and food business, usually horticulture, mixed crop and livestock, biodiversity friendly foodway corridors

Urban areas as sites of farmers' markets, retail and wholesale markets, food hubs, urban farms and community gardens that enable access to fresh, local, sustainably produced and processed food

Coastal areas and riparian zones can protect biodiversity including wildlife and pollinator habitat, provide flood and heat island control, storm surge protection, aesthetic and recreational benefits

Source: https://www.un.org/esa/ffd/wp-content/uploads/sites/2/2015/10/CityRegionsAsLandscapesforPeopleFoodandNature_smallest.pdf

Table 1: Pillars and features of the City Region Food Systems approach and related resilience impacts

Pillar or feature	Resilience impact
Multi-stakeholder engagement	• Enables resilience-building across jurisdictions through supportive local and national laws and policies • Facilitates continuous learning, and adaptive governance to respond to sudden, unpredictable changes • Lays the foundation for a long-term food governance platform • Builds a broad base of awareness and engagement, leading to actions on multiple fronts and greater capacity and resources for implementation
Active food systems planning	• Promotes working across silos for more integrated resilience • Allows measures to be included in existing policies, plans and programmes
Increasingly robust urban–rural linkages	• Disseminate the opportunities and benefits of CRFS from producers to consumers • Promote building polycentric food networks between neighbouring jurisdictional areas
Quantitative and qualitative tools (e.g. food flow maps; indicators)	• Enable benchmarking and tracking of progress over time • Engage stakeholders and mobilise action towards desired outcomes
Built infrastructure to link supply chain nodes	• Provides support to small-scale farmers and businesses involved in food transportation and storage • Enables effective online tools such as virtual farmers' markets for both formal and informal markets
Inclusion of traditional and indigenous food system knowledge	• Contributes to addressing specific local challenges, as well as cooling the climate and protecting agricultural biodiversity
Recognition that food systems are context specific	• Paves the way for appropriate local policies, and sharing of good practices between CRFS stakeholders

and a methodology to build regional food system resilience (Blay-Palmer et al., 2021; Roosendaal et al., 2020). The core pillars and features of the CRFS approach are instrumental in increasing sustainability capacity and, with it, resilience to multiple shocks and stresses (Table 1).

The COVID-19 experiences of the pilot cities showed that they benefited from **increased capacity developed through engagement with the CRFS approach**, so that they were better prepared to deal with the challenges.

In Quito, the pre-COVID-19 vulnerability analysis of the local food system, supported by WLE and RUAF in 2019, helped establish stronger urban-rural connections between farmers and consumers. As COVID-19 set in, these networks allowed a shift to markets focused on neighbourhoods and urban farmer networks using home deliveries to overcome transportation problems. Through this, the supply of healthy food from the city's urban and peri-urban gardens, which provide 1.35 million kg of produce annually, was uninterrupted.

In Medellín, the CRFS project's finding that 30% of the city's food comes from the surrounding region enabled the government to sync up farmers and consumers. Twenty tonnes of fresh food from urban and peri-urban gardens were accessed in the first two weeks of COVID-19, helping subsidised canteens to continue to provide healthy food to

low-income households.

A similar story was seen in Antananarivo, where vegetable gardens in schools and communities, planned pre-COVID-19, increased household access to nutritious food during the pandemic. Furthermore, the CRFS assessment in Antananarivo had highlighted the importance of central markets for improving coordination and reducing the presence of middlemen, who can increase prices 4- or 5-fold. When a partial lockdown, curfews and reduced market hours hit perishable foods, including milk, eggs, and some vegetables, pre-pandemic CRFS food flow maps enabled the federal government to break an emerging negative feedback loop and provide support for food processing that prevented food waste. Milk was converted to cheese and yoghurt, eggs were cracked and frozen, and chickens were frozen. This helped stabilise future supply, adding to local food security.

Pilot cities' experiences also demonstrate that **strong urban-rural linkages help improve adaptation and build resilience** in times of crisis.

In Melbourne, direct linkages were set up for small-scale farmers to deliver fresh foods to homes and communities. This provided a safety net to avoid food insecurity for consumers and stabilise markets for producers.

In Colombo, projects at the CRFS level helped to close loops and reduce food losses, including turning waste food into compost that can be used as organic fertiliser. This helps to boost reliable nutritious food production, particularly given supply chain challenges during the pandemic.

In maximising these rural-urban linkages within CRFS, IT emerged as a game changer during the pandemic. For example, in Medellin an online farmers' market was visited 12,000 times, with 120 different farmers' markets distributing 8.2 tonnes of food in the first three days. There are similar stories in many CRFS in both the Global South and North, including in Austria, Germany, France, Vietnam, China, India, Australia, Canada and the United States. The exceptional uptake of these platforms benefits producers as they are linked to direct sales and more stable markets, while consumers can more readily access nutritious local food.

Addressing the pandemic has demonstrated the potential of more regionally focused food systems that engage multiple stakeholders across scales to define and then resolve interconnected food system challenges. The **coordination inherent to the CRFS approach** can enable city regions to prepare for multiple hazards and shocks, and protect livelihoods and food security. In Colombo, a government taskforce enabled access to staple foods, fruits and vegetables during the pandemic by coordinating food flows across administrative boundaries using alternative supply chains and supporting farmers' access to inputs and establishing hubs for the distribution of farm products.

Conclusion

The CRFS approach can help establish long-term participatory platforms that can result in more relevant policies, interventions and programmes for regional governance, and foster cooperation and collaboration among different governments and other actors. Together these initiatives result in food systems that are more resilient to shocks and hazards, including pandemics.

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Bottom-up initiatives to build city region food system resilience in Antananarivo

The city region of Antananarivo benefits from a dynamic flow of local food products. However, these are constantly challenged by climate events, such as heavy rainfalls, floods, extreme variations in temperature and droughts. As in many cities, the COVID-19 pandemic has contributed to the disruption of food supply chains and caused a significant increase in food insecurity and malnutrition for the most vulnerable people. Representatives from different government levels (city, region and central government) are currently working together to develop a joint strategy to build the resilience of the city region food system (see box p. 16) through adapted agriculture practices, within a boundary of 100 km from the urban centre.

At the metropolitan level, cultivated agricultural lands cover around 50% of the territory. With the support of FAO and RUAF, local institutions in 2020 set up a multi-stakeholder advisory working group to create a joint vision and determine priorities for reinforcing the food system. Members of this working group included technical officers from the municipality of Antananarivo, the Analamanga region and the Ministry of Agriculture (MAE), representatives from the National Office for Nutrition (ONN), the Risk and Disaster Management Office (BNGRC), the National Office Climate Change Coordination (BNCCC) and the Emergency Prevention and Management Unit (CPGU) plus other key stakeholders representing the private sector and civil society organisations working within the CRFS.

Initially, a rapid risk analysis was conducted to review existing evidence of climate risks in each part of the food system (production, agro-processing, supply and distribution etc). This involved mapping vulnerabilities and identifying a list of indicators related to resilience capacities.

Following this, participatory workshops were held so that stakeholders could share information about existing practices and actions from production to consumption that contribute to food resilience. This exercise brought a greater understanding of what was already being done to improve the food system's

Credits: ©FAO Madagascar

resilience. An exercise was carried out to identify priority areas for further action by creating linkages between the different initiatives and programmes. The workshops allowed stakeholders from different backgrounds to identify common areas of interest, and this triggered dialogue over building a common framework of action for the future.

However, further information was needed to better understand how to respond to all the vulnerabilities in each part of the CRFS. Thirteen key commodities were selected, and an in-depth survey was launched to map all areas within the CRFS boundary that are exposed to climate hazards, and where there are concentrations of vulnerable people. The risk components within all these areas were then studied in detail, using focus groups, participatory mapping and group interviews, which included detailed information on infrastructure. This information was laid over the maps of vulnerable areas to provide a detailed view of those communities that would benefit from interventions, and for which commodity.

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As an example, the community of Ampanefy, located to the south of the city, was identified as having the highest risk of drought and tends to experience the highest level of crop losses. Most peri-urban farmers in Ampanefy focus on rice production, the main commodity in the food system and one that provides a high level of revenue, aided by the good road infrastructure between Ampanefy and urban markets. The assessment showed that these farmers could benefit from interventions that would build their technical capacity to mitigate the impact of drought on rice production.

In another example, all the communities located to the immediate west of the urban area produce vegetable crops. These communities registered as having the highest level of flood risk, high crop losses and low revenues. They ranked high on both the food consumption score (FCS, a proxy indicator for household

caloric availability based on diversity and frequency of food groups over a seven-day period) and the coping strategy index (CSI, showing use of harmful coping strategies when faced with food insecurity)[1], given that vegetable crops are a critical source of both nutrition and revenue. The assessment showed that these farmers could benefit from assistance in adapting their production practices to preserve food access for the urban poor.

Rather than developing a whole new strategy, the next step is to develop a programme of interventions that leverage *existing* local programmes, policies and capacities in a coordinated way, towards realising the shared vision. The policymaking process is facilitated by:

i) acknowledging the role of each level of government, department or sector, non-governmental organisation and private sector entity (including farmer coalitions), and their relationships with actors already implementing practices.

ii) ensuring the engagement and participation of these actors and all the other actors in the different nodes of the CRFS.

iii) using indicators to monitor improvements in resilience capacities across all components of the CRFS.

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[1] The FCS and CSI food security and nutrition indicators were adopted for the in-depth assessment as they are officially recognised by the Malagasy authorities.

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Quito, Ecuador: pioneering food as part of urban resilience

Quito is one of the very few cities to have institutionalised food within its urban resilience strategy. With a long history of urban agriculture and food system assessments, Quito has developed resilience capacities to address multiple shocks and stresses.

The Resilience Strategy of the Metropolitan District of Quito, published in 2017, includes the goal to 'promote the food economy as a foundation for development' as part of the pillar to forge a 'resourceful and solid economy'. This goal includes three actions:

• Develop a plan to strengthen Quito's food system;
• Strengthen the urban agriculture programme in Quito (AGRUPAR);
• Develop a Sustainable Agricultural Production programme.

The recognition of food as a component of urban resilience followed Quito's participation as a pilot city in the first phase of the RUAF-FAO City Region Food assessment and planning programme from 2015 to 2018. The assessment and consultations under this project highlighted the vulnerability of the food system to many hazards including climatic, volcanic and seismic events and landslides, human pressures caused by consumption patterns, agricultural production, new industrial and residential developments, and social, economic and political crises.

Through a series of participatory events, awareness was raised among actors from across the food system, and a multi-stakeholder platform, the Agro-Food Pact of Quito (PAQ), was formed in 2017. In 2018, a Food Charter was signed, and PAQ proposed an action plan for a sustainable food system that included the development of a food policy for the city and promoting changes in the way food is produced, processed, transported, and consumed, and how waste is managed.

In 2019, the Municipality of Quito adopted the PAQ's proposed action plan which, together with the framework for action of the Milan Urban Food Policy Pact, informed development of the Quito Agro-Food Strategy. The current challenges are, firstly, for the strategy to receive recognition as an ordinance; and secondly, for the PAQ to

be consolidated as a food council. With the support of the Water Land and Ecosystems Progamme of CGIAR and RUAF, a follow-up vulnerability analysis of the local food system was conducted in 2019. This assessment led the city to acknowledge the need for a dedicated Resilience Strategy for the Quito Food System that addressed multiple scales (from the neighbourhood to the global), took an integrated approach to the various dimensions of food security and links within the food system, and identified weaknesses that needed to be addressed to build resilience. This strategy is currently being finalised, prior to being validated by PAQ.

The COVID-19 response
The initiatives outlined above were pivotal in ensuring a rapid, effective response to food system challenges resulting from COVID-19.

• The action of strengthening AGRUPAR within the Resilience Strategy of the Metropolitan District of Quito meant that resources were available to address food challenges, despite budgetary constraints faced by the municipality as a whole.
• The geographical information system (GIS) map produced during the CRFS pilot project was valuable in visualising the COVID-related food crisis, and formed the basis for maps that enabled the municipality to target assistance where it was most needed.
• The multi-scale approach to resilience meant AGRUPAR management was able to re-think the commercialisation of produce, with urban farmers' markets focussing on neighbourhood or home deliveries.

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Preparing for the unexpected in Melbourne's city region food system

Melbourne's recent experiences of multiple shocks and stresses, and their compounding impacts throughout the food system, show that it is not enough to only be prepared for known or likely hazards. Maureen Murphy and Rachel Carey provide pointers on preparing for any hazard.

Melbourne in the State of Victoria, South-East Australia, is home to around 5 million people. The peri-urban area produces sufficient fresh food to meet around 40% of the city's food needs (Sheridan et al., 2015), but production is at risk from population growth, urban development and climate change. The mean temperature in Victoria has risen by over 1°C since 1910 (Bureau of Meteorology and CSIRO, 2020) and droughts are expected to increase in both duration and frequency. Increases in flooding events and high fire-danger days are also anticipated (Clarke et al., 2019).

In early 2020, Victoria experienced severe bushfires that burned around 1.5 million hectares. Agricultural production was severely impacted, food retail businesses closed in fire-affected areas and there were impacts on food supply across the state. Many of the fire-affected areas were still recovering from drought (Bushfire Recovery Victoria, 2020).

On top of this, by mid-2020, the effects of the global COVID-19 pandemic were being felt. The pandemic created unprecedented demand on Victoria's food supply, resulting in temporary shortages of staple food items in supermarkets. The accompanying economic crisis led to rapidly rising levels of food insecurity, highlighting the fragility of food relief systems based largely in the charitable sector (Carey et al., 2020).

As part of our Foodprint Melbourne project, we interviewed stakeholders (from government, industry and civil society). They identified a wide range of shocks and stresses that could impact the food system, including geopolitical, ecological and cybersecurity shocks. One government stakeholder emphasised that, *"a key part of*

resilience and adaptation is the ability of a system to cope with a shock, whatever that shock may be".

So how can we build the resilience of food systems to any shock or stress? One key ingredient is **networks and collaboration within communities and among food system stakeholders.** Local government areas that had been affected by earlier bushfires in Victoria were able to respond quickly to the pandemic by reactivating existing community and stakeholder networks. Networks build relationships and trust, enabling a rapid and agile response.

Another lesson is that **government policy needs to adapt to an environment of uncertainty.** In an increasingly unpredictable world, it is time for cities to develop food system resilience strategies that aim to strengthen their food systems against any hazard, both the known and the unknown.

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Time for resilient agriculture and food systems in Saint Vincent and the Grenadines

The 2021 eruption of La Soufrière volcano in Saint Vincent and the Grenadines (SVG) took place in a context of years of significant under investment in the agriculture sector. Cheron Constance traces the immediate impacts on farms and farmers, the medium- and long-term consequences, and proposes actions to build a resilient, revalued food system for the island nation.

Following the initial eruption of La Soufrière on 9 April 2021, ash, pyroclastic flows (hot ash, superheated air, and debris travelling at speed close to the ground) and lahars (mudflows of water and volcanic debris) decimated fields, denuded fruit trees, killed livestock and made transportation routes impassable.

Nearly 25,000 people (≈20% of the country's population) living in the most dangerous 'red' and 'orange' zones were displaced, including many of the nation's 10,000 registered farmers. The evacuation order came just 24 hours before the first explosive eruption, too late for many farmers to move their livestock.

Heavy rain towards the end of April caused more damage, turning the deposited ash into a heavy cement-like substance that collapsed roofs, broken tree limbs, and formed a hard crust on fields.

The destruction of crops in the red and orange zones led to concern about high food prices in the medium term. Many farmers lacked resources to replant or buy seeds, and many had already been struggling due to the impacts of COVID-19.

Much of the food currently available in SVG is from international relief parcels and donations from the Vincentian diaspora and largely comprises canned meats, dried pasta and ultra-processed snacks. The consequent increased consumption of unhealthy foods

may further reduce the market for locally grown, nutritious foods and increase the incidence of non-communicable diseases.

Actions for a resilient, revalued food system
Decisive policy action is crucial if SVG is to learn from the eruption, build back better and help the farming community through future crises. This includes:

Investment in agriculture, including infrastructure improvements, a livestock registration system, and transparent, updated data to inform strategic planning for agricultural development.

Policies that address all parts of the entire food system, from production to consumption. In 2020, the Ministry of Agriculture proclaimed local food provisioning to be a priority in order to cut the high import food bill, but no attention was given to increasing the demand for local food, especially among producers themselves.

Identifying multiple ways to use natural resources, including using food and agri-tourism to re-envision tourism and shift away from the exploitative dynamics that foreign entities wield over Caribbean countries.
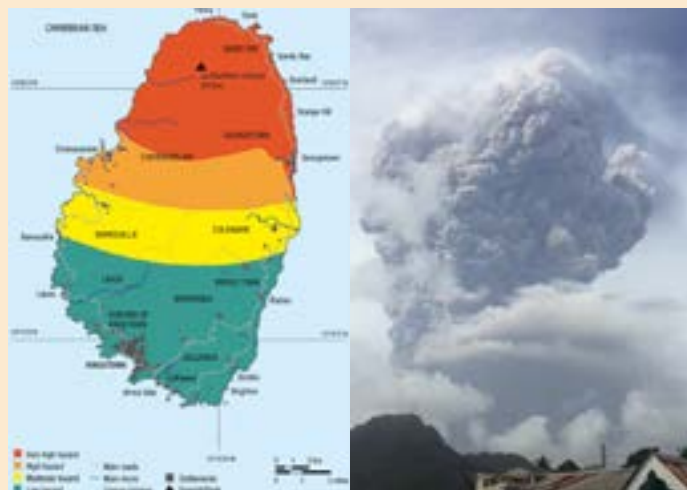
Including agriculture and food in disaster risk-reduction planning, including establishing adequate early warning systems, helping farmers adopt resilience practices, implementing protocols to protect crops and livestock, and budgeting for adequate and appropriately distributed relief funds.

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> **More information**
> • This is an edited version of a longer article available at https://ruaf.org/news/high-time-for-resilient-agriculture-and-food-systems-in-st-vincent-and-the-grenadines

Credits left: ©"The Dilemmas of Risk-Sensitive Development on a Small Volcanic Island." https://www.mdpi.com/2079-9276/5/2/21/html Adapted by the University of the West Indies Seismic Research Centre following discussions with National Emergency Management Organisation

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What next? Sustained, ambitious, and expanded food systems resilience efforts

Jess Halliday
Barbara Emanuel

This collection of articles showcases pioneering work across the globe to build food systems resilience by some cities and city regions, and the support provided by experts at international organisations and research institutes. Evidence is mounting that including food in urban resilience strategies ensures resources for food-related programmes, while bringing benefits for other resilience goals – such as providing economic opportunities, creating healthier food environments, and fostering gender equality and social justice.

The City Region Food Systems approach, developed by RUAF and FAO, shows great potential for increasing resilience to multiple shocks and stresses and, with it, contributes to overall sustainability. For instance:

• Assessing risk throughout the food system enables stakeholders to identify likely hazards and their impacts;
• Mapping exposed areas and vulnerable communities enables targeted resilience-building actions and emergency responses;
• Formation of networks between and across municipalities enables rural-urban coordination and alignment of supply and demand during crises;
• Regionally-focused food systems foster diverse supply chains, of varying lengths and locations, so that commodity supplies are better secured when one source is impacted by hazard.

However, much work remains to be done to ensure efforts to build urban and city region food system resilience are **sustained, ambitious,** and **expanded**.

Sustained and ambitious
Resilience-building is not a one-off task to be tackled through a single time-limited project. In early adopter cities, it is imperative to secure on-going engagement of all stakeholders, such as through long-term governance platforms and, where possible, institutionalisation of food systems within mainstream planning frameworks – as well as integration into other sectoral strategies, programmes and funding streams in a coordinated way.

In addition, there must be a shared understanding that resilience is not just about 'bouncing back' from impacts but is an on-going process of learning from each crisis and constantly building forward better. More ambitious and systemic interventions are needed. This requires interventions to improve all forms of resilience – prevention, anticipation, adaptation and, where necessary, truly transformative interventions that re-shape the structures underlying food systems for more sustainable outcomes for all.

Expanded to new places
In most urban areas food systems are not yet on the policy agenda, let alone viewed as a crucial component of urban resilience and disaster risk reduction. This oversight persists despite the impacts of COVID-19 on supply chains all over the world, which brought heightened awareness of their fragility.

In some cities, temporary, emergency mechanisms to ensure food security during COVID-19 may be harnessed as resilience capacities, and the relationships forged during emergency response should therefore be leveraged and sustained wherever possible. For example, new networks between food system stakeholders and between community groups should be maintained and strengthened; re-purposed assets and infrastructure may be retained to address endemic food insecurity; and new business models that allowed stakeholders to pivot to balance supply and demand should be supported and scaled out.

The complexity and scale of mounting an effort to build food system resilience can be daunting. But there are multiple entry points to this work – such as environment, food security, social protection, and urban resilience in general, to name but a few. The rationale used to engage and mobilise stakeholders is highly context specific. In all cases, however, the effort requires identifying and leveraging all available resources, drawing on existing research and existing data to identify and address gaps and vulnerabilities, while building on existing relationships

between stakeholders, organisations, and sectors.

The transfer of experiences and co-learning between different urban and city region contexts must be a priority. This includes documenting what actions have been put in place in advance of and in response to shocks and stresses, how and by whom. Understanding the governance conditions that enabled each action, the research and data used to inform the emergency response, as well as

challenges that had to be overcome, provides clues as to which other places it might be applicable in.

In these times of uncertainty and increasing unpredictability, failure to shore up food systems places food system assets, infrastructure, and stakeholders at grave risk of harm from future crises and disasters. The human, economic, and environmental costs of inaction will be immense.

Key resources

Building Sustainable And Resilient City Region Food Systems
Assessment And Planning Manual And Online Toolkit

Developed over six years and piloted in 11 city regions, the new City Region Food Systems Programme Assessment and Planning Manual contains detailed guidance to help stakeholders assess the sustainability and resilience of their city region food systems, identify bottlenecks and vulnerabilities, and plan evidence-based actions. It is accompanied by an updated online toolkit containing additional resources, workshop materials, training units, and detailed technical examples from the pilot cities.

To download the manual and access the Toolkit, please visit https://www.fao.org/in-action/food-for-cities-programme/toolkit
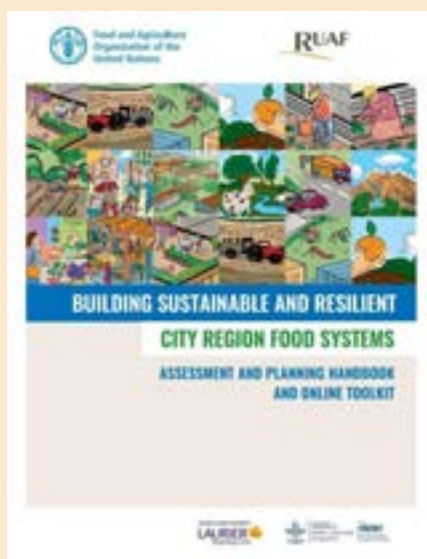
• Urban food systems and COVID-19: The role of cities and local governments in responding to the emergency
https://www.fao.org/policy-support/tools-and-publications/resources-details/en/c/1271238/

This report presents the findings of an FAO survey in April and May 2020 to understand how city and local governments faced the challenges of food systems disruptions associated with COVID-19.

• City Region Food Systems: Building Resilience to COVID-19 and Other Shocks
https://doi.org/10.3390/su13031325

This journal article by the RUAF-FAO City Region Food System (CRFS) team reviews the contribution a CRFS approach makes to regional sustainability and resilience for existing and future shocks including climate change.

Full reference: Blay-Palmer, A., Santini, G., Halliday, J., Malec, R., Carey, J., Keller, L., Ni, J., Taguchi, M., & van Veenhuizen, R. (2021). City Region Food Systems: Building Resilience to COVID-19 and Other Shocks, Sustainability 2021, 13(3), 1325.

• Food Cities 2022 Learning Platform
The Learning Platform hosted by the Food Foundation includes a series of webinars, case studies, and other resources on emergency food planning for cities.
https://foodfoundation.org.uk/initiatives/food-cities-2022

• Cities and Agriculture – Developing Resilient Urban Food Systems
This book provides urban planners, local policy makers and urban development practitioners with an overview of crucial aspects of urban food systems based on a review of research results and practical experiences in both developed and developing countries.
https://ruaf.org/document/cities-and-agriculture-developing-resilient-urban-food-systems

Full reference: De Zeeuw, H., & Drechsel, P. (2015). Cities and Agriculture: Developing Resilient Urban Food Systems, p. 431. London and New York: Routledge.

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Social Inclusion

The need for a human rights based transformation

When UN Secretary-General António Guterres called for a "decade of delivery and action for people and planet" in 2019, he emphasised that "the 2030 Agenda places the goals of inclusion, empowerment and equality, leaving no one behind at the heart of our efforts". This is linked to SDG 10 (reducing inequalities and ensuring no one is left behind) but, in fact, cuts across all the other SDGs. Inequality within cities or countries, and among them, is a persistent cause for concern. COVID-19 has deepened existing inequalities, hitting the poorest and most vulnerable communities the hardest and has shown the vulnerability of our food system and its inequalities.

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Social inclusion is the process of improving the terms on which individuals and groups take part in society: improving the ability, opportunity and dignity of those disadvantaged on the basis of their identity. Inequalities exist for various groups but especially for vulnerable populations, including older people, women, youth, people with disabilities and refugees and migrants, who are particularly at risk of being left behind. Leaving no one behind and achieving the SDGs is inherently linked to human rights.

The 2021 Food Systems Summit (UNFSS) enabled a wide variety of actors to share and learn through the 5 Action Tracks, with the aim to foster new partnerships and actions. Although all Tracks address support, finance and the empowerment of vulnerable people, Action Track 4 has a deliberate focus on the elimination of poverty,

including addressing inequity and seeking to ensure that food systems "leave no one behind". The UNFSS process has been criticised (Food Systems for People), in that the coalitions for change should take into account key elements of food systems change, namely food sovereignty, as well as climate and gender justice, towards people's and planetary health.

Increasingly, people live in cities and, often unplanned, urbanisation transforms food systems in many ways. The 'urbanisation of poverty' forces cities and city regions to develop innovative strategies to eradicate urban hunger and improve livelihoods. Alongside access to food, improved health and economic aspects, localised food chains can play a role in the social inclusion of marginalised groups by providing them with an opportunity to feed their families and generate

an income, while also enhancing self-management and entrepreneurial capacities, women-focused interventions and offering physical and/or psychological relaxation. In its various work and publications, RUAF has explored these aspects, most recently in its Urban Agriculture Magazine no. 37 on Gender (RUAF, 2019).

The first article in this section provides an overall picture of Social Inclusion, including elements of the right to food, justice and interventions on inclusion and enhancing agency. This is followed by three further articles. Bill Vorley, of IIED, looks at the informal sector and argues for the need to properly understand and collaborate with the food system of the majority. Mangiza Chongo of Hivos and Frank Mechielsen, former Hivos Coordinator of SD4All programme, present lessons learnt and ongoing work on putting

citizens at the centre of food system changes and the value of flexible local structures such as food change labs and local food councils to improve inclusion. The third contribution comes from Isabela Vera who looks at the inclusion of forcibly displaced persons in urban food systems and the role urban and peri-urban agriculture (UPA) can play in different circumstances.

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Inclusive urban food systems:
some considerations

René van Veenhuizen
Gigi Wing-Davies

In his underline recent and well-received speech[1] at the UN Food Systems Pre-Summit in Rome, Jeffrey Sachs of Columbia University said: *"We have a world food system based on large multinational companies, based on private profits, based on extreme irresponsibility of powerful countries with regards to the environment and it's based on a radical denial of the rights of poor people… we need a different system, a better one"*.

We need policies that promote an equitable and regenerative food system. This is one that, from farm to table, from processing to disposal, ensures economic opportunity, high-quality jobs with living wages, safe working conditions, access to *healthy, affordable and culturally appropriate food plus environmental sustainability.*

Who should set this agenda and how? We urgently need *inclusive food system governance*. This goes beyond multi-stakeholder approaches: we need *citizens, and especially the most vulnerable*, to have their voices and

Food security and nutrition for all

The High Level Panel of Experts (HLPE), in their 15th report to the Committee on World Food Security presents the evolution of the Sustainable Food Systems Framework, which now firmly includes Food Environment (dimensions of availability, access, utilisation and stability), Sustainability and Agency. They see Agency as a key element in the concept of Food Security. Agency refers to the capacity of individuals or groups to make their own decisions about what foods they eat, what foods they produce, how that food is produced, processed and distributed within food systems, and their ability to engage in processes that shape food system policies and governance. Efforts should be made, particularly by national and local authorities to deliberately take action to (their obligations and duties to) address the right to food and justice, and build agency. Empowerment of citizens is on their role as food system participants, to exercise agency over their own livelihoods and ensure access to diverse, nutritious and safe food (HLPE, 2021).

priorities reflected in food policies that prioritise human and environmental health, and leave no one behind.

Social inclusion

Social inclusion is the process of improving the terms for individuals and groups to take part in society. Vulnerable groups include the un(der)employed, refugees, displaced people and immigrants. Within these groups, children and women are the most vulnerable. Gender equity, and social inclusion or diversity are recognized prerequisites for more just, fair, dignified and prosperous societies. This refers to the equal rights, responsibilities and opportunities of all people, regardless of gender or sex, ethnicity, age, ability, religion, and culture. You can read more on RUAF's call to action, targeted at cities and the international urban food policy community, to raise our game on gender and inclusivity underline here (RUAF 37, 2019b).

Half of Africa's population are under 25 years of age and, over the next ten years, only one in four of Africa's youth at best are expected to find a waged job (World Bank, 2014). Young people are on the move from rural spaces to cities not only within countries but between neighbouring countries and globally as they seek better lives (RUAF, 2018). People working in the **informal food sector** (including market/street vendors) could also be considered a vulnerable group in the food system context. Despite the critical role they play in feeding cities (see the article by Bill Vorley, p. 32). Despite being the backbone of the 'food system of the majority', they are excluded from power and resources and their voices are not heard when developing city food plans and policies.

Forced displacement from conflict, persecution, human rights abuses, natural disasters and failure of governance has led to almost 80 million Forcibly Displaced Persons (FDPs, see the article by Isabela Vera, p. 39), of which 30 percent are in Africa. We can expect this number to increase significantly as the climate crisis worsens.

Changing the game

More than two thousand game-changing propositions have been gathered under five underline Action Tracks[2] (AT) as part of the process of the UNFSS. Action track 4 emphasises that advancing equitable livelihoods requires building the agency of the underrepresented: "those that lack the space or the enabling environment in which to exercise their

power and rights". Game-changing solutions include working with women, youth, small-scale producers and displaced communities, and localising food systems, shorter chains and (re)connecting. Among the large number of solutions and coalitions proposed, Section 6.1.1 on Food Systems Governance is particularly noteworthy.

Transforming food systems involves more than facilitating multi-actor platforms. A thorough understanding of the food system, its vulnerability, potential entry points etc. is required along with a series of participatory discussions at various levels on the changes wanted and needed. This requires going beyond the classical value chain approach, and considering the multi-functionality of food and agriculture systems and the opportunities within city regions. Urban food production and localised, shorter food chains contribute to enhanced food security and improved nutrition for the urban poor. They also contribute to local economic development, poverty alleviation and social inclusion of the urban poor, and women in particular, as well as to reduced vulnerability to climate change. It is important to give specific attention to those groups (women, youth, indigenous peoples, the disabled, seasonal labourers etc.) whose livelihoods are most limited by current food system practices.

Why cities?

Cities are where most of the world's food is consumed. Over half of the global population live in urban areas and this is expected to rise to two-thirds by 2050. Rapid urbanisation

is often accompanied by increasing urban poverty, food insecurity and malnutrition plus a rise in diet-related illnesses, such as type-2 diabetes, resulting from the 'nutrition transition': people moving away from traditional and diverse wholefoods, and eating a narrower range of processed sugary foods.

Cities must play a major role in the required transformation. Inclusive city food policies, developed with citizens to reflect *their* priorities for human and environmental health, can tackle the food security and nutrition challenges of urbanisation. Since the food system is globally responsible for over one-third of global greenhouse gas emissions (Crippa et al., 2021) this is also a critical entry point to strengthen the climate resilience of cities.

Coalition on Sustainable and Inclusive Food Systems

RUAF is a member of the Urban Food Systems Working Group (UFSWG) that, alongside various other organisations including UN agencies (led by FAO), city networks (MUFPP, C40, ICLEI, etc.) and several NGOs (Rikolto, GAIN, etc) and leading academics, is developing the Coalition for Action on Urban and Local Food Systems, asking for attention to be given to the particularities of urban food systems, their vulnerability and the need for multilevel governance that includes local governments and citizens to bring about food system transformation. This relates to all Action Tracks.

[1] https://www.youtube.com/watch?v=WZ1xc491mnU&ab_channel=UThant
[2] https://www.un.org/en/food-systems-summit/action-tracks

Building Agency

Food system transformation requires prioritising access to food as a fundamental human right, one that is inseparable from social justice: "feeding people is one of the primary objectives of any government, and is a part of national sovereignty (HLPE, 2021)". Advancing equitable livelihoods requires building the agency of those people that lack the space or the enabling environment in which to exercise their power and rights.

Interventions to improve the sustainability and nutrition of food can be misdirected when based on incorrect assumptions about people's priorities and knowledge. When citizens have the capacity to act on their own priorities, in other words when they have agency, there is the potential to achieve better and more durable outcomes. Interventions need to be carefully grounded in the realities of the food systems of the majority.

The governance and planning of urban food systems is particularly complex as urban food systems are generally not shaped through deliberate political, organisational and administrative processes. A wide range of actors need to be at the table: all levels of government, the private sector, civil society organisations, academics, marketing and distribution networks, trader and informal sector associations etc. Many tools exist, including several used by RUAF partners. (For a recent overview, p. X in section Governance).

A growing number of cities and regions, in both the global north and south, are forming multi-actor platforms to share perspectives on the challenges facing the food system in order to develop innovative solutions and to influence food-related policy. These include Food Policy Councils and similar groups, food forums, platforms, networks, coalitions and food change labs. The structure and mandate of these groups varies considerably. Very often, food production is a key theme or action area. In some cases, urban agriculture

was the entry point for the formation of a food policy council that takes a broader, entire food system perspective (RUAF, 2019a). Often, urban planners are not leading the development of urban food policies but, nevertheless, can play a crucial and integrative role.

The "food system of the majority" (see the article by Bill Vorley, p. 32) is largely informal. Despite this, the needs and interests of those who form the backbone of food supply chains, from small-scale producers, processors, distributors and vendors to citizen-consumers, are too often overlooked. Multi-stakeholder platforms should ensure that they are fairly represented given their critical role in feeding the majority of urban citizens. RUAF and Hivos are currently facilitating food change labs in five cities and towns in Zimbabwe, Zambia and Uganda.

Spaces and opportunities for agency should be designed from the beginning of an intervention, building around people's priorities rather than an imposed agenda, while adapting work flows to deliberately keep citizens at the heart of advocacy[4].

And building resilience

A transition to a more just and sustainable food system has to be part of any comprehensive plan to address the climate crisis. In addition to the moral merits, climate justice and human rights are also essential from a pragmatic perspective. To truly address hunger, governments must go beyond ensuring food production and recognise and actively support policies that ensure the right to food.

This work needs to be linked to efforts elsewhere for more open and inclusive governance and government institutions that will enable meaningful and diverse civic participation and oversight in public decision-making, especially at local levels. Growing evidence confirms that, under the right conditions, citizen engagement can help governments improve development results by creating links between citizen engagement and improved public service delivery, public financial management, governance, social inclusion and empowerment. However, the outcomes of citizen engagement are highly context-

specific and sensitive to government and citizens' capacity and willingness to engage.

More than ever, there is a need for localised and inclusive food systems and an agroecological transformation of food systems. Policies that promote a transformation of food systems need to be empowering, equitable, regenerative, and productive, and must boldly reshape the underlying principles from production to consumption. These include stronger measures to promote equity among food system participants by promoting agency and the right to food, especially for vulnerable and marginalised people.

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Credits: ©GEAG

4 https://ruaf.org/document/multi-actor-initiatives-in-action-lessons-from-the-sustainable-diets-for-all-programme/
5 https://hivos.org/opinion/urgent-call-to-put-justice-at-the-center-of-climate-action/
6 https://hivos.org/program/voices-for-just-climate-action/

Social inclusion in the food system of the majority

Bill Vorley

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Many of us are involved in projects and policies for more sustainable, nutritious and inclusive food systems. Along the way, we pass by the ordinary food system, of people moving, aggregating, processing, cooking, selling and buying food. It is in this food system, outside the world of projects, on the edge or beyond state regulation and without large corporate structures, that the majority of low-income people around the world are fed and employed.

If we are to get an idea of how food systems on a scale to make a difference respond to urbanisation, climate stress and epidemics, we need to take the time to understand this existing food system of the majority. This in turn requires an understanding of informality. Without that understanding, attempts to transform food systems, social inclusion and sustainability may not be transformational at all.

Informal is normal

The study of informality has its origins in urban settings, but it is a feature of entire food supply networks that stretch, sometimes across national borders, from rural areas to growing urban centres through trading hubs that are key to the organisation of domestic food markets (Vorley, Guarín, & Nicolini, 2020). Many of the enterprises that make up the food system used by the majority operate below the radar of government regulations or, in other words, in the informal economy: the part of the economy where people work outside the rules of the formal economy to negotiate precarious livelihoods and meet basic needs. In sub-Saharan Africa, the informal economy generates around two-thirds of GDP and 80 percent of urban jobs. It is the main or only source of nutrient-rich foods for people on low incomes, and also a significant source of livelihoods, including for women and youth who may have few other viable income-generation options.

Assumptions about informal food systems being inefficient, unsafe and unhealthy are rife among policymakers, but also within the international development community. Informal food systems are therefore often misunderstood by those who seek to improve or replace them, leading to mismatches in policy, planning and development.

Informal food systems have many characteristics of resilience: that is, the capacity to manage or to buffer against risks and losses and to maintain supplies in the face of stresses, including climate change, economic crises or political instability.

The closure of informal food markets at the start of the COVID-19 crisis exposed a clear bias against informality, on the grounds of health and safety, despite small-scale street traders of fresh and prepared foods fulfilling a crucial role in urban food security. Food safety policy can be one of the strongest forces that drive the concentration of food systems in large-scale businesses. The reality of the informal food economy is that, through ties of trust, supply chain actors already do a lot to mitigate risk. Raw, unpasteurised milk is a good example. Raw milk has a dominant market share in many countries from Tanzania to India, and informal trust-based systems safely deliver a highly perishable product to consumers without a cool chain at a much lower price than processed and packaged milk. Nevertheless, government hostility to the informal milk sector remains widespread. This, and other examples, does not necessarily mean that consumers are content with the safety of their food supply, or the environments in which food is traded. However, a policy of full eradication and formalisation can have major unintended consequences for the food and nutrition security of low-income citizens.

Crackdowns by municipal authorities can be especially harsh on informal street vendors in large cities where competition for public space and 'modernisation' policies create a lot of tension. In smaller municipalities, the policy is more likely to be one of benign neglect.

Informality and inclusion

Informality is a structural feature of entire economies and is the norm in the food systems of the poor, rather than a relic of the traditional system soon to be eclipsed by modernisation. The size and dynamism of the informal economy is partly due to deregulation and the withdrawal of the state from markets, which has relegated many workers, especially women and youth, to a 'survival economy'. However, it also may be a positive choice by people who see more benefits in this entrepreneurial sector. In Bolivia, the informal economy has grown to such an extent that the 'popular' and indigenous sector has overtaken the formal one to become dominant and mainstream.

These small-scale entrepreneurs are not waiting to be 'included' in a value chain or a project: they have carved out an economic space without support from, and sometimes even facing hostility from, the state. They may be wary of being 'included' on the terms set for the formal economy, e.g., regulation, governance structures and taxation, without any perceived improvements in their livelihoods.

Is formalisation the way forward?

States and municipalities have an understandable preference for formalisation since this can broaden their tax base, finance basic services, reduce debt and donor-dependence and uphold public order. However, the reliance on formalisation as a policy tool does create unrealistic goals and directs donors' interventions towards the formal sector as the only accessible engine of inclusive growth. Furthermore, formalisation distances the state from addressing the real challenges of informal enterprises, such as limited access to training and services, labour exploitation, risks to public health, the reach of criminal gangs and the degradation of natural resources. It pushes some of the worst aspects of informality further into the dark.

There are light-touch approaches to formalisation in the food sector that can offer more inclusive alternatives to prohibition and eradication. A well-known example is the relocation, by municipal governments, of informal street vendors to purpose-built market areas away from busy roads and sidewalks, and the confinement of trading to these spaces through zoning and policing. This is an attractive concept, but the logic of informality can and does creep in with people defending their livelihoods and rights to public space. John Taylor and Lily Song describe this phenomenon in three cities in Indonesia, where relocation was first hailed as a success but, over time, vendors returned to the streets to be closer to their customers amid accusations of regulatory mixed messages (Taylor & Song, 2016). We saw another regulatory mismatch in the city of Bandung, where the relocation of street vendors seemed to be aimed more at attracting tourists to the city than protecting the food security of the working poor, such as the young low-paid textile factory workers in the city's industrial zones (Natawidjaja et al., 2019).

Credits: ©Bill Vorley

Or collaboration?

There has rightly been a stress on agency in some of the processes leading to the 2021 UN Food Systems Summit, notably in the livelihoods track (Neufeld et al., 2021). This is especially pertinent to the world of informal food, where current approaches tend to marginalise the voices, concerns and knowledge of those who work in them, and assume poor performance in terms of nutrition and sustainability.

The alternative, of recognising the informal food systems as allies, not enemies, is necessary, but easier said than done. Municipal governments and informal operators have few incentives to bridge the gulf of distrust and to start a dialogue and collaborate. Urban authorities may be wary of being accused of promoting underdevelopment. Informal actors may also be mistrustful, and genuine leaders difficult to identify. In this world, NGOs and CSOs may be less effective intermediaries between authorities and informal entrepreneurs than in their more familiar world of projects and donor assistance.

Even if dialogue between government and informal food operators does take place, it will likely focus on narrow and immediate priorities, which risks talking at cross-purposes. Informal operators will seek to defend their livelihoods and rights to public space against harassment and eviction. Governments will seek to promote civic order, traffic flow, public safety and urban modernisation. What is often not discussed, despite its overriding importance, is the role of informal providers in the food and nutrition security of the urban poor. This is where the greatest opportunity to build a common cause lies.

Collaborating around food and nutrition security is an opportunity to meet people where they are, and base policy on evidence of how towns and cities already feed themselves: what is currently working to meet low-income people's needs and link them to affordable, accessible and nutritious food. Such interactions can highlight those parts of the food system that need to be defended and improved, perhaps with some infrastructure, rather than being cleared away for a modern formal food system or being planned out of future urban development. This

could include existing approaches to ensuring food safety and quality used by vendors and their customers. It also opens doors to self-regulation, such as the agreement between citizens, vendors and local authorities reported from Hanoi by Nguyen Loc and Paule Moustier that kept affordable food within the reach of local residents (Loc & Moustier, 2016).

Entrepreneurs and consumers in this informal food system are unlikely to attend meetings, because it is 'not their world', because of the fragile economics of their enterprise or because people do not feel they have been endorsed to speak for their group. Therefore, a different approach is needed to ensure representation and legitimation of grassroots' voices and agendas. A focused effort could especially help mitigate against the exclusion of women and youth from consultations and decision making, as was seen in the 'food lab' with women in Bolivia as part of the 'Sustainable Diets for All' programme (Vorley, Guarín, de Toma, et al., 2020). We also need to reflect on our discourse: if the agenda is framed around food system transformation, city regions or certified food, the struggle may be lost before it begins.

Evidence for inclusive intervention

The everyday food system that feeds and employs low-income people is extraordinary in what it achieves and what it can still achieve. It will need to work even harder as climate change and urbanisation put more strain on food systems. Opportunities for developing genuinely inclusive food systems need to recognise and involve the informal food economy. Not through limited, but through building long-term collaboration and common cause.

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Mangiza Chongo
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Building agency through Food Labs, experiences from East and Southern Africa

Interventions to improve the sustainability and nutrition of food can be misdirected when based on incorrect assumptions about people's priorities and level of knowledge. When citizens have the capacity to act on their own priorities - when they have agency - there is the potential to achieve better and more durable outcomes. This article describes experiences in Africa with Food Change Labs.

The High Level Panel of Experts on Food Security and Nutrition (HLPE) in their latest report emphasised that the concept of food security has evolved and now recognises the importance and central roles of *agency* and sustainability, alongside the other dimensions of food security (availability, access, utilisation and stability). Agency refers to the capacity of individuals or groups to make their own decisions about what foods they eat, what foods they produce, how that food is produced, processed and distributed within food systems, and their ability to engage in processes that shape food system policies and governance (HLPE, 2020). These six dimensions of food security are reinforced in conceptual and legal understandings of the 'right to food' and should be included in conceptual and policy frameworks.

The Sustainable Diets for All program (SD4All) worked in Bolivia, Indonesia, Uganda, Kenya and Zambia for five years (2016-2020) to improve access to sustainable, diverse and nutritious food. The programme was coordinated by Hivos, the International Institute for Environment and Development (IIED) and partners in the focal countries and funded by the Dutch Foreign Ministry. The programme was characterised by citizen agency (IIED & Hivos, 2020) (see the article by Bill Vorley, p.32) and the key elements included generating and assimilating evidence by citizens, building multi-stakeholder coalitions and using innovative methods for actors to share knowledge, evidence and ideas, aiming for food systems transformation. The capacity development of partners proved to be the most enduring achievement of the programme, and SD4All successfully used multi-actor initiatives to link citizens with differing interests and create alliances focused on sustainable food system transformation, known as Food Labs (also referred to as Food Change Labs or Food System Labs)[1]. Partners in Uganda convened multi-stakeholder consultative meetings on policies related to food systems which resulted in the growth of the indigenous and traditional food systems agenda beyond the SD4All partners. The

Zambian partners' Consumer Unity Trust Society (CUTS) and the Alliance for Zambia Informal Economy Association (AZIEA) set up food networks involving city authorities and actors in both the formal and the informal food markets in Lusaka and in Kitwe City respectively.

Food Labs

Food Labs are participatory innovation processes that aim to better understand problems in the food system, build coalitions of change, generate solutions and test them on the ground. The process is ideal for addressing complex issues that encompass a myriad of actors, facets and policies. These Labs were successful in bringing in marginalised stakeholders including small-scale farmers, women and food vendors and providing voice to their concerns and ideas. They are designed to promote systemic change, shifting food systems towards greater inclusivity and sustainability. Although the labs in Zambia and Uganda followed the same process and principles, they each had their own unique set-up and content focus, leading to a rich array of results.

Including women, youth, marginalised communities, food vendors and other vulnerable actors in the food system was a key element in the SD4All advocacy programme. For many of the economies in developing countries, food systems are to a large extent organised informally. For those on low incomes, informal outlets, such as street vendors, are often the main source of food. They are also a source of income for many, and especially for women and young people who tend to be disproportionately excluded

from the formal economy. Despite this, policymakers usually ignore or marginalise the informal economy. International donors tend to be more interested in high-value agricultural markets and seldom engage with actors in this space. The support from Hivos and IIED to the food labs provided advocacy for the initiatives and agendas of informal food actors. Their needs are wide-ranging, from practical, such as improved water supply and sanitation in market stalls, to political[2].

In Zambia, the lab worked to ensure local-level participation and interpretation of national policy to foster a greater say for local citizens in issues that directly affect them. In Uganda, the food labs convened on food system related policies resulting in the growth of the indigenous and traditional food systems agenda, extending it beyond the usual food system advocates.

Fort Portal

Fort Portal is a tourist centre in the Republic of Uganda and a major exporter of food products to Uganda's other cities and to neighbouring countries. Food vending in developing countries, and particularly in urban areas, is a source of affordable food and employment for the urban poor. In Fort Portal, food vending is a lifeline for over 28,000 people daily. A study in April 2020 on the impact of COVID-19 government lockdown restrictions in Fort Portal showed that almost all food vendors had left the streets and lost considerable income. Without their daily income, meeting their essential household needs

was no longer possible without assistance from the government, NGOs, family and friends. The study further revealed that roughly 80% of the food vendors in Fort Portal are single mothers and 20% are youth. Many of these food vendors have faced earlier difficulties, and especially economic hardships that led them to drop out of school and seek early marriages.

Under the Healthy Food Africa project[3], the Food System Lab in Fort Portal prioritises the promotion of dietary diversity, gazetting food spaces and 'green belts' as part of physical planning and developing public-private partnerships for food and nutrition security[4].

Credits: ©Salim Dawood

The **Zambia Food Change Lab** began at the local level in Chongwe District. It was set up in 2015 to address the problem of limited diversity on Zambian farms and consequently on local diets. The Chongwe Food Lab soon evolved into the Zambia Food Change Lab in 2016, which was broader in scope and looked at national challenges in the Zambian food system. This occurred after adding partners with a national focus and realising that agricultural policy issues were central to achieving change in the local food system.

In 2015, the Food and Agriculture Organisation and RUAF, through the Food for the Cities Program, recognised the gap between local realities and national level interventions and introduced the City Region Food Systems (CRFS) project[5]. The approach included linking a city's food systems to surrounding peri-urban/rural populations that

provide food for the cities. Both the Chongwe Food Lab and the CRFS undertook a food system assessment as a starting point to better understand the available strengths and challenges faced, as well as a multi-stakeholder dialogue to discuss the assessment and develop strategies. The Zambia Food Change Lab formed a partnership with the Lusaka City Council to work together on food issues concerning the city and ensure the participation of ordinary food system players such as traders. This led to the formation of the Lusaka Food Policy Council (FPC) that will coordinate efforts to address challenges within the Lusaka food system.

The lab's journey, from its early days as the local-level Chongwe Food Lab to the national Zambia Food Change Lab, was a rich learning experience marked by different interventions at these two levels. While both labs addressed food and nutrition issues, the Chongwe lab interventions were more concrete and easier to link to outcomes. For example, in its efforts to address unsustainable land management and deforestation, the Chongwe Food Lab participated in various activities involving community awareness and reforestation. This resulted in community leaders managing deforestation better through various mechanisms, such as issuing fines and penalties, as well as capacity building in reforestation through Hivos funding to the Kasisi Agriculture Training Institute. The lab further addressed the lack of diversity in diets through food festivals and food dialogue meetings, community radio programmes aimed at creating awareness of the nutritional value of local crops etc. Local-level interactions were better placed to ensure local-level participation.

In contrast, it was more difficult at the national level for the Zambian Food Change Lab to be sure whether claimed outcomes were actually the result of the lab's interventions, given that there are numerous players and interventions in the food system at the national level. For this reason, the city-level Lusaka FPC was subsequently created in order to be able to show outcomes and impacts more easily. The Lusaka FPC provides an opportunity for otherwise neglected groups to make their voices heard. In general, it is often difficult for marginalised groups to access national-level platforms as these usually encourage more formal actors and discussions. Additionally, the Lusaka FPC provides an opportunity to institutionalise the experiences gained from the other two food change labs.

The various approaches used are complementary to one another and build to enhance the performance of the food system as a whole. The experience of the Food Change Lab moving from the local to a national focus and the findings from the CRFS project highlighted the need to form a multi-stakeholder group at the local level to ensure adequate inclusion, thereby leading to the formation of the Lusaka Food Policy Council.

Putting ordinary citizens at the centre of the food system requires flexible local structures such as food change labs and local food councils to improve inclusion, and also to stimulate further uptake and policy change on the ground that allow these citizens to more easily participate. Farmers and informal sector workers are usually forgotten (or unacknowledged) in formal platforms that address food system challenges due to factors such as low levels of education and an inability to speak in the official national language of communication (English). However, structures such as the food change lab and food policy councils provide a space where the voices of these neglected groups can be heard, resulting in more meaningful and effective decision-making and interventions.

The Food Change Labs in Zambia and Uganda used systems-thinking to successfully kick-start the transformation of local food systems in these countries. The programme both implemented and monitored food system changes involving practical interventions in the field. Further, engagement with local governance mechanisms was identified as key to ensuring successful and sustainable food labs that ensure social inclusion of the commonly neglected voices in food system interventions. Governance mechanisms, on various levels, must create an enabling environment that takes account of the needs and perspectives of vulnerable populations whose homes, livelihoods, health and food access are most at risk. In this environment, the policy participation of all actors in the food chain, from producers to consumers, can ensure relevant, accountable, equitable and sustainable action.

Credits: ©Njavwa Simukoko

[2] https://ruaf.org/document/multi-actor-initiatives-in-action-lessons-from-the-sustainable-diets-for-all-programme/

[3] https://healthyfoodafrica.eu/

[4] https://hivos.org/program/sustainable-diets-4-all/publications/

[5] https://www.fao.org/in-action/food-for-cities-programme/overview/what-is-the-crfs-programme/en/

Work on Food Change Labs

Healthy Food Africa (HFA) is an EU-funded Research & Innovation Action that supports more sustainable, equitable and resilient food systems by reconnecting food production and food consumption. The HFA work is localised in ten African cities, in so-called Food System Labs (FSLs). The Food System Labs bring together the local food system's actors to tackle context-specific food system challenges from consumer awareness to sustainable production, local food diversity, improved post-harvest technologies and food safety. The FSLs are supported by researchers and practitioners from Europe and Africa, working in nine work packages, who will also enhance and facilitate the learning processes within each and across the FSLs. The project started in June 2020 and will run for five years. Building on the work and experiences of the SD4All programme, Hivos facilitates FSLs in Zambia (Lusaka and Chongwe) and in Uganda (Fort Portal) where it is collaborating with the local NGO Kabarole Research Centre. Under HFA, Hivos is building the capacities of vulnerable groups (youth, women, traders and farmers) to address challenges

identified under SD4All. Hivos also co-leads, with RUAF, the Work Package on Food Systems transformation that includes the partners AERES, Luke and MV.

Hivos, in partnership with UNICEF Zimbabwe and MDP, are undertaking the **"Youth Food Action"** Project that aims to enhance young people's food environment in Harare and Bulawayo. This project was launched in response to the alarming rise in diet-related health issues among young people in **Zimbabwe**.

The project:
- develops increased understanding of Harare and Bulawayo's adolescent Food Environments & Food System;
- establishes multi-actor **Food Change Labs** in Harare and Bulawayo to influence the cities' food environments and food system governance; and
- develops action plans to improve the urban food environment targeting improved nutrition for adolescents in Harare and Bulawayo (reflecting the priorities of youths and residents).

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Credits: ©Salim Dawood

More information
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Inclusive food systems for equitable livelihoods: the case of forced displacement

Isabela Vera

Credits: ©Andrew Bradford

In a recent episode of the acclaimed food podcast Take a Bao, host Loh Yi Jun took a digital journey to Malaysia, wanting to find out more about PichaEats, a meal subscription service that empowers refugee women to cook their traditional foods for hungry Kuala Lumpurians. He tells the story of Nesreen Al-Khatib, a Syrian refugee who, like many others in her situation, suffers from the impact of Malaysia's refusal to become party to the 1951 United Nations Refugee Convention, leaving her unable to legally engage in paid employment. Selling her creamy hummus and crispy falafel through PichaEats has allowed her to gain financial independence amid the uncertainty of fleeing her home country's civil war[1].

Nesreen's story of hardship and resilience is becoming increasingly common. The UN Refugee Agency (UNHCR) estimates that globally there are now almost 80 million forcibly displaced persons (FDPs), a term which includes refugees, internally displaced persons (IDPs) and returnees. This number is higher than ever before in human history. Concentrated in urban and quasi-urban environments, such as refugee camps and settlements, these FDPs often live in extremely challenging conditions. Nevertheless, a sense of hope survives alongside the grim realities, wrapped up in the transformative potential of something that has brought humanity together since time immemorial: food and, more specifically, sustainable and inclusive urban food systems. The links between inclusive

food systems and the livelihoods of FDPs are mutually reinforcing: sustainable livelihoods enable equitable access to the food system, and equitable access to the food system supports sustainable livelihoods.

This issue is gaining traction in the international community, with this year's United Nations Food Systems Summit (UNFSS) including an action point on the link between ensuring sustainable livelihoods for the world's FDPs and promoting equitable access to food systems. Social inclusion, defined as the process of improving the terms on which individuals and groups take part in society, for FDPs can only be achieved by reducing the barriers to their participation in economic activities and connecting them to the food system. The role of urban and peri-urban agriculture (UPA) in supporting FDPs is increasingly recognised (see box 'Coming soon: Urban/Peri-Urban Agriculture and Forced Displacement', p. 41). Beyond UPA, long-term solutions that enable FDPs to participate in the food system as producers, retailers and consumers are needed. This article focuses on identifying key challenges to FDP integration into food systems in different contexts, explores best practices and examples from around the world, and highlights key takeaways for advocates, donors and policymakers.

[1] https://junandtonic.com/takeabao

In camps: focus on participatory planning to ensure access to UPA

FDPs in camps and settlements are disconnected from their food system and often dependent on food aid. Facilitating access to UPA has the potential to restore FDPs' livelihoods by improving food security, economic resilience and health. In the longer term, UPA can help FDPs generate an income, contributing to the broader development of the area in which the FDPs are being hosted and strengthening social cohesion between FDPs and local populations.

UNHCR advocates for camps to be the exception rather than the rule when it comes to sheltering FDPs, and recommends that they serve only as a temporary stop. This is challenging given the protracted nature of complex crises: 75% of the world's FDPs have been displaced for more than five years. Where camps are unavoidable, the SPHERE humanitarian handbook (The Sphere Handbook, 2018) recommends incorporating UPA when planning camp design. However, this has yet to become common practice. Humanitarian and development agencies should mainstream participatory planning for UPA projects in camp management, ensuring adequate space and access to resources for household gardens and enabling FDPs themselves to co-lead interventions such as agricultural training and input provision. The transformative potential of UPA is exemplified by camps supported by the urban agriculture NGO Lemon Tree Trust in the Kurdish region of Iraq where gardening competitions, market gardening and regenerative practices all feature in a resilient 'urban' food system that leaves the land in better condition than it was found.

Without formal status: focus on reducing barriers to employment

Many of the world's urban FDPs lack a legal status that affords them the right to work and live freely[2]. A recent joint submission to the UN Secretary-General's High-Level Panel on Internal Displacement by the International Institute for Environment and Development (IIED), UN Habitat and the Joint IDP Profiling Service advocated for a "proactive" response by cities to recognise FDPs as rights-holding urban citizens (IIED, UN Habitat, & JIPS, 2021). IIED recommends that donors consider providing direct financing to cities hosting FDPs in order to facilitate a progressive refugee policy that removes as many barriers to decent employment as possible. Uganda offers a good example: it is host to the world's third-largest FDP population but has long been considered a global leader in refugee management due to its liberal policies which allow FDPs in urban areas to trade in agricultural products and run a range of businesses including restaurants (IIED, UN Habitat, & JIPS, 2021). In Jordan, the International Labour Organization has successfully supported cooperatives in securing legal work permits for Syrian refugees in Irbid and Mafraq (ILO, 2021).

Decision-makers addressing both responses to forced displacement and the development of sustainable food systems need to work to remove the barriers that prevent FDPs from engaging with the food system. Innovative social enterprises, such as the aforementioned PichaEats in Kuala Lumpur and Mumm, and a similar start-up in Cairo which provides refugee or asylum-seeking women with the opportunity to sell their home-cooked food to the public, can provide a discrete and direct way to increase the socioeconomic opportunities for women FDPs. In many cities where FDPs live, informal food systems already play a major role in urban economies (see the article by Bill Vorley, p. 32). Any actions taken to strengthen, develop or formalise these food systems should take account of the impact this will have on FDPs that lack a formal status.

With formal refugee status, focus on inclusive food policy and planning

Cities around the world, including those supported by RUAF, are increasingly committing to ambitious urban food strategies that seek to shorten food supply chains and stimulate local economies. These new urban food governance structures and processes need to include diverse voices, including those of FDPs, to ensure that cultural food practices are adequately integrated into urban food policy and planning. In many situations, FDPs arrive with food practices that are already well aligned with urban food sustainability goals. For example, research carried out in the Netherlands has shown that the demand from Syrian communities for fresh labneh and properly-minced köfte resulted in Dutch dairy farmers and butchers learning how to prepare them locally (Brons et al., 2020). In urban gardens in Dallas, Texas, that are run by the International Rescue Committee, refugees from around the world reconnect with their agrarian roots by growing vegetables for their communities. Decision-makers can pick up on such sustainable food practices and enable their success elsewhere.

Credits: ©René van Veenhuizen

[2] https://www.worldbank.org/en/topic/forced-displacement#1

Credits: ©René van Veenhuizen

Looking forward

With the incidence of climate-driven migration set to rise, the intersection of forced displacement and inclusive food systems will remain critical for years to come. Key takeaways for policymakers, donors, humanitarian and development agencies and NGOs include:

- The refugee camps and settlements of the future need to focus on integration and regeneration, and plan for the long-term with goals to improve food security and foster ecological resilience.
- In increasingly common situations of protracted displacement in cities, FDPs without formal refugee status must be granted safe access to the labour market, including the food supply chain, as a mechanism to support sustainable livelihoods.
- In urban food policy and planning, the presence of diverse voices in decision-making processes is critical in ensuring that migrant food practices are taken into account.

Urban food systems are a remarkably versatile and powerful entry point for supporting the socio-economic inclusion of FDPs and strengthening the resilience of cities and camps more broadly.

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Coming soon: Urban/Peri-Urban Agriculture and Forced Displacement for the Springer Urban Agriculture Book Series

The Springer Urban Agriculture Book Series is for researchers, professionals, policymakers and practitioners working on agriculture in and near urban areas. A forthcoming volume, Urban/Peri-Urban Agriculture and Forced Displacement, will be the first of its kind to examine the role of urban and peri-urban agriculture (UPA) as an intervention in situations of displacement into camps, settlements and cities, in the short, mid- and long terms. Using historical and contemporary case studies from around the world, the book aims to support researchers and practitioners interested in the wider and more effective use of UPA linked to forced displacement and in contributing to sustainable and resilient human settlements and cities more broadly.

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Inclusion is a nuanced concept

In all contexts, it is important to keep in mind that FDP communities are not homogeneous: inequalities of power and privilege related to gender, sexuality, caste, ethnicity, able-bodiedness, neurodiversity and other factors of discrimination and oppression exist. Any interventions to support FDPs must account for these power imbalances through careful and considered impact planning and stakeholder management.

The way forward: looking ahead

In the context of the ongoing COVID-19 pandemic, and during and following the UNFSS and COP26 deliberations, "transformation" is probably the word most used in conjunction with the term "food system". There is now no doubt about the urgent need to transform our global food system. *Why, how* and *who* should lead this transformation will not easily find consensus, however

Transformation is also the main motive behind the "Coalitions for Change"[1], formed in the wake of the UNFSS. However, the proof of the pudding will be in how they align their work and what they achieve in properly channelling international funds. A major part of the eating of this pudding lies in inclusiveness. Indeed, inclusion, empowerment and equality cut across the SDGs, but it will require bold decisions, support and action to really improve the terms on which individuals and groups take part in society. The game-changing solutions will need to take into account the long-acknowledged key elements of food systems change, such as food sovereignty, gender] climate justice, and the health of people and the planet.

COVID-19 has shown the vulnerability of our food system and its inequalities. Despite various studies (FAO, 2020) that draw on the COVID-19 experience to make the case for transformation, most government responses focus on vaccinations and bouncing back, not moving forward. Nevertheless, as shown throughout this magazine, there is now increased attention to enhancing short food chains and building agency. There is a clear need for localised and inclusive food systems, and a human rights-based and agroecological transformation of food systems, that involve informal sector actors such as smallholders, vendors, slum dwellers and displaced persons. With the incidence of migration driven by climate change, economic instability, and war set to rise, the intersection of social inclusion and urban food policy will remain critical for years to come.

Putting ordinary citizens at the centre of the food system requires flexible local structures such as food change labs and local food councils to improve inclusion. But the existence of these structures is not enough. People who have been excluded from discourse and decision-making be actively enabled to participate, e.g. through the provision of transportation to meeting venues, overnight accommodation, and childcare, if required. Accessible, non-expert language must be used in discussions, as well as local dialects where some participants may not understand another working language. Careful facilitation is required to ensure local people and informal actors are empowered to express their needs and wishes, and not overshadowed by more confident and powerful formal stakeholders. In addition, uptake of people's views is needed, with real policy change on the ground, for the participation of all citizens to be meaningful.

As Bill Vorley argues, advancing equitable livelihoods requires building the agency of the underrepresented: providing space and an enabling environment in which to exercise their power and rights. This implies protecting and strengthening their knowledge, resilience and innovation capacities. Leveraging opportunities for developing genuinely inclusive food systems means recognising and involving the informal food economy through building long-term collaboration.

Urban food policy and city-level planning must ensure that leadership and decision-making processes are inclusive (see also the section on Urban Planning, p. 75). In the increasingly common situation of protracted displacement, forced displaced people (FDPs) in cities without formal refugee status must be granted safe access to the labour market, including the food supply chain, as a mechanism to support sustainable livelihoods.

Over the coming years, networks of organisations working to advance food systems transformation – including RUAF – must build a strong evidence base to inspire decision-makers to include informal food systems actors and recognise their considerable contribution to livelihoods and sustainable diets. As well as finding ways to collaborate, organisations should capture examples of good practice in inclusive policy innovation, that build on the agency and strengths of informal food systems.

Urbanisation poses challenges but also presents many opportunities. Urban food systems are a powerful entry point to support inclusion and the right to food, and to strengthen the overall resilience of cities. The most vulnerable populations must be prioritised and equal representation ensured in urban planning and in designing people-centred systems, led by people's needs, wishes, and lived experiences.

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Credits: ©Gordon Prain

Urban and Peri-urban Agriculture

Urban Agriculture and its multiple values

The production and direct marketing of food in and around cities has always been there and is not something new. However, the concept of Urban and Peri-urban Agriculture (UPA) has only been developed in the past two to three decades. There are various definitions, reflecting the dynamic and multifunctional nature of UPA, including its different components. A comprehensive and often cited definition is by Mougeot (2000):

Urban agriculture is located within (intra-urban) or on the fringe (peri-urban) of a town, a city or a metropolis, and grows or raises, processes and distributes a diversity of food and non-food products, (re-)uses largely human and material resources, products and services found in and around that urban area, and in turn supplies human and material resources, products and services largely to that urban area.

In the past few years, UPA has gained increasing attention, for various reasons and by different sectors or disciplines. The recent disruption of urban food systems during the COVID-19 pandemic has emphasised the importance and *added value* of (re-) connecting local food production and consumption, and the importance of easy access to healthy and nutritious food. The *added UPA value* here is its contribution and complementary role to rural farming in view of food security. It also underlines the linkages of UPA to the urban ecosystem and its multiple values, which is the main focus of this section. This will be addressed from different perspectives. UPA is described as a shifting form of urban land use while consistently being part of city development. Different trends can be seen, but these are often merely name changes, very often covering quite similar issues throughout the past twenty years. Articles address urban agroecology, urban soil health, waste re-use and resource recovery, and enhancing inclusive food value chains in and around cities.

The multiple functions and values of UPA are expressed in a diversity of forms or types as highlighted in the numerous publications on UPA by RUAF, FAO and others (a selection of these are highlighted on p. 74). Attention to UPA in the past few years has sought to understand it as part of urban food security, i.e. the continuum of food value chains from the surrounding rural areas to the urban market and consumer, and as critical part of the wider Food System or Food Environment (e.g. short food chains). Using typologies and concepts of UPA and its role in Food Environment and City Region Food Systems (CRFS) remain important though, and in understanding the resilience of urban food systems (rural-urban foodsheds), their vulnerabilities and opportunities, in order to discuss its multiple values, agree on priorities, and to enable inclusive multistakeholder processes for influencing planners and decision-makers.

For many years, RUAF and partners have been working on these various aspects of UPA and been part of building the multiple benefits narrative. This has always been a key aspect, and continues to be an important element of current work on CRFS, the Milan Urban Food Policy Pact Framework and Monitoring system, and the Food Environment. UPA provides opportunities to contribute to better access to food, diversified food value chains, improved livelihoods, especially for the lower income citizens, and can lead to more resilient urban food systems (as also highlighted in other sections in this magazine). Increasing attention is being given to the transformation of globalised food systems and the important role of cities (given that more than half of the population lives here). UPA needs to be seen as part of this transformation, emphasising inclusivity, regeneration and circularity. However, the last decade has also helped us to demystify UPA which is not a golden bullet for any development goal, but can add significant value to many. Recent work under the CGIAR Water Land and Ecosystems Programme and the advice on UPA given to ADB has highlighted investment needs and opportunities (see the article by Gordon Prain, p. 53).

Pay Drechsel

Is urban farming in the global south potentially a temporary phenomenon?

From all that we know, the answer to the above is no. However, the links between urban growth and urban farming are complex and dynamic, and developments largely location-specific.

At first glance, the term 'urban agriculture' may appear to be an oxymoron, or no more than a temporary phenomenon, given that agriculture is commonly considered a quintessential rural activity (Smit et al., 1996). However, already Smit and colleagues argued that this is unlikely to be the case and that, despite increasing land prices, urban farming does not disappear but adapts and moves in response to changing conditions. Even where vacant plots are built upon, vertical or rooftop gardening might emerge.

Despite the globally large extent of urban farming (Thebo et al., 2014), data to verify its development over space and time remain scarce and the perception of the temporary nature and insignificance of urban farming, particularly in low-income countries, persists (Badami & Ramankutty, 2015). Although many urban farming sites have appeared resilient to urban development (see e.g. Drechsel & Dongus, 2010), more drastic changes are likely during the recent period of accelerated urban growth, particularly in Africa.

To understand the spatial and temporal dynamic of urban farming, i.e. whether it is declining, increasing or maybe only shifting laterally within cities, Follmann et al. (2021) reviewed over 90 publications addressing 83 cities in Africa, Asia and Latin America. The authors found that the more advanced GIS studies using remote sensing images (ideally from different years) had been able to identify farmland expansions in 52-60% of cases, whereas more local studies without this remote sensing ability identified an expansion in only 20% of cases.

For example, in Freetown, Sierra Leone, in Kumasi, Ghana, and in Khartoum, Sudan, the increase in the urban built-up area saw an expected decrease in agricultural land within the same urban boundary. However, when a larger or changing baseline was considered (in line with city growth), research showed that the cropland that was lost within the inner-urban area or urban fringe was replaced with newly cultivated land elsewhere. In another example, there was no decrease in farming in the inner city area of Dar es Salaam (Drechsel & Dongus, 2010).

Credits: ©Desire J.P. Lompo

In line with the recommendations of Follmann et al. (2021), a paper (Karg et al., 2021) by the RUAF-supported UrbanFoodPlus project[1] presented new spatio-temporal data for four cities in sub-Saharan Africa. The data showed that for Ouagadougou, where urban market gardening has been recognised by the city authorities, and in Bamako, that either new inner-city farming sites emerged on previously vacant land or that farmers had shifted to the urban fringe resulting in an overall increase in irrigated cropland in the past 15 years. Conversely, urban cropland had declined substantially in Accra and to a lesser degree in Bamenda.

Across all cities, the key drivers influencing the direction of change were population pressure, official support (or lack thereof) of urban farming, land tenure and geographical factors such as land suitability and water access. In cities where cropland was decreasing, the implications included diminishing individual farm sizes, intensification of remaining sites, cessation of farming in affected suburbs and, if possible, the shift of farmers to other sites. The latter, in addition to the physical availability of land and related resources, also depends on social relations and informal rules. In other instances, farmers moved out of the city or away from agriculture (Karg et al., 2021).

Analytical challenges and limitations can greatly affect the discussion on the impact and sustainability of urban farming (Drechsel & Dongus, 2010). However, in general, its complementary role to rural agriculture, such as in the provision of particular, often perishable, commodities, or in view of social and environmental benefits to urban dwellers has been well established.

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Credits: ©Desire J.P. Lompo

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[1] The study was funded by the German Federal Ministry of Education and Research (BMBF) and the CGIAR Research Program on Water, Land and Ecosystems (WLE).

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Joe Nasr

Definitions, typologies and trends in urban agriculture – looking back and looking forward

When I was asked to share my thoughts on questions of definitions and typologies as well as trends in urban agriculture (UA) – or urban and peri-urban agriculture (UPA)[1] - I could not help but reflect on various anniversaries in my relationship with this subject.

Thirty years ago, I discovered the subject through my work with the late Jac Smit (http://www.jacsmit.com/). Twenty-five years ago, I co-authored with Jac and Annu Ratta what proved to be a seminal book, *Urban Agriculture: Food, Jobs and Sustainable Cities* (Smit et al., 1996). Twenty years ago, we completed a revised edition of that book (Smit et al., 2001).

Fifteen years ago, I developed (with the late Marielle Dubbeling) a pioneering online Course Series (now Certificate) in urban agriculture (www.ryerson.ca/ce/ua).

Then, ten years ago, for the book based on the *Carrot City* traveling exhibit (www.carrotcity.org), my co-authors and I had to figure out how best to group the dozens of case studies that we had documented into coherent categories that made sense of the ways in which design and planning shape urban agriculture (Gorgolewski et al., 2011).

On each of these occasions, my colleagues and I inevitably had to confront thorny questions such as:
- What do we mean by 'urban (or peri-urban) agriculture'?
- What are its limits (geographic and otherwise)?
- What main categories does it cover?
- Who is involved in it, and what other actors have a stake in it?
- What are the sites where it is commonly practiced?
- What methods and products are often associated with it?

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[1] In 2021, while editing a new multi-author sourcebook on UPA (FAO et al., 2021) – see box p. 59 – my co-authors and I revisited definitions and typologies (see chapter 1).

The early work with Jac Smit showed the incredible diversity of phenomena that UA encompasses, and this diverse spectrum of situations is captured in the book. By trying to make sense of this extreme variety, we were essentially forced for the first time to confront the questions above.

In fact, the structure of the book can be seen as a series of typologies, each chapter (particularly in the second part) dissecting the world of UA according to questions of who, where, what. On top of these building blocks, other considerations were covered in subsequent chapters: what benefits does UA provide and what functions does it fulfil, what problems are commonly caused by UA, what constraints confront UA actors and what opportunities are available to them.

We had barely completed this book before we felt the need to revise it. This reflected the fast-changing nature of urban agriculture, the growing information that was emerging about it, and the recognition that some aspects and world regions were missing or under-recognised. UA includes a number of relatively stable categories: home gardens, community gardens, school gardens etc. However, beyond these seemingly stable categories, we quickly recognised the highly dynamic nature of UA. First, even within basic categories such as "community garden" there is a great variety and constant evolution (Nasr, 2021). Second, new types emerge over time in relation to particular methods (e.g., aquaponics), technologies (indoor production using LED grow-lights), actors (refugees), settings (rooftop gardens) and organisational forms (backyard sharing).

Behind this dynamism in UA lie a number of drivers. These include: the intensification of land pressures, growth in the demands of those with higher incomes as well as by poorer populations, changing lifestyles and the development of energy-saving technologies. Consequently, we felt the need to add a new chapter on trends to the second edition of the book, written right at the start of the new millennium. As such, Chapter 10 of the book sought to examine the larger trends of which the 'resurgence of urban agriculture' is a component. Based on this examination, we made some 'educated guesses' about what factors would influence the evolution of urban agriculture and shape where it would subsequently lead. Box 1 provides a review of these educated guesses, two decades later, identifying whether the anticipated trends indeed proved significant and which trends were underestimated or not identified at all in that chapter.

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Looking back and forward at trends identified in 2001²

Urbanisation

As predicted, fast growth and increasing diversity in the global urban population did not make UA obsolete but, rather, continued to feed the pressure for urban food growing associated with multiple challenges, including more epidemics. The expansion of urbanisation impacts not only existing urban areas but also rural ones. **Urban-rural linkages** are becoming ever-more important, as reflected in the current attention to 'food-sheds', 'city-region food systems' and 'green infrastructure' – including more attention to UA within suburbs and smaller towns. With the ongoing growth of cities, changes in **land use, tenure and patterns** impact UA in many ways. By 2021, trends that were just beginning in 2001 have strengthened (albeit unevenly) including: land-use policies that recognise UA, more permissive UA regulations and an increasing visibility of above-ground and soil-less UA.

Globalisation and localisation

Due to several factors, two parallel trends observed twenty years ago have continued to expand and diversify: the expansion of a globalised, oligopolistic food system that relies on complex supply chains; and a simultaneous and contrasting blossoming of various forms of localised food supply systems that often integrate UA. The availability of new hardware such as smart phones and software such as social media has grown dramatically, enabling greater access by both producers and consumers to **information**, even among poorer populations. This has also enabled the emergence, expansion or adaptation of various forms of **marketing** and distribution, from community-supported agriculture to good-food boxes to hyper-local delivery by bicycles. Changes in **lifestyles**, a demand of food production 'close to the dinner plate' and a shift towards eating outside the home, that we noted in 2001 have become even stronger, with various implications for UA.

Production technologies and systems

Some of the methods cited in 2001, including hydroponics, controlled irrigation and improved greenhouses, have expanded dramatically as part of what is now known as "controlled environment agriculture" (CEA - see box p. 55). The attention given to energy use is increasingly central in this regard.

Environment and natural resources

The attention given to the use of all major resources (water, land and soil, and energy) has grown over the past two decades, both in terms of their ecological costs as well as their economic costs, for UA practice and the role of UA in nature-based solutions.

Food security, health and nutrition

The main function associated with UA has long been its contribution to food security and better nutrition. Attention to UA's complementarity and importance in increasing access to fresh food has gained far more recognition for its role in food security – at the household, community and global levels – than it had in 2001, and especially so in these pandemic times.

Special groups

Since the start of this century, a plethora of studies have increased recognition of the place of particular actors – women, refugees and displaced persons, immigrants and migrants – in UA. More broadly, the role of UA has become more routinely integrated into broader community building and social inclusion efforts.

Waste management and nutrient cycling

Attention to the closing of various cycles, avoiding wasting resources and reducing the wastage from the entire food system (including UA) has gained a far greater recognition in global culture over the past decade, although the implementation of related actions has lagged the awareness.

Research and support

Although the number of studies and publications around the UA domain was already growing in 2001, the number has expanded today to a level that was hardly imaginable back then. Nevertheless, much of the data is still anecdotal and difficult to compare. As such, while multi-city and multi-country studies have become more common, the challenges of assessing the scale and impacts of UA remain significant. Moreover, support for UA has not become institutionalised to the same extent as the research has expanded.

² The categories of trends identified in Chapter 10 of Smit et al.'s 2001 edition are shown in bold.

Nevertheless, overall, that chapter written two decades ago seems fairly prescient as most of the trends it identified have continued, evolved and often strengthened. The significance of some trends was perhaps insufficiently emphasised, and some priorities that were then appearing on the horizon, earning only a brief mention, are nowadays absolutely central to any discussion on UA's present and future. Two trends that are nowadays at the heart of any discussion on urban agriculture and food systems were notably overlooked in the 2001 publication.

Climate change bears on everything today and will only weigh more heavily in future years. Some of the impacts may support UA in some places at some times, for instance with longer growing seasons in northern climates or greater demand for urban CEA projects. However, the impacts are likely to be largely negative, if not catastrophic, for agriculture in urban and rural areas. Increased variability and wild fluctuations in weather will make it more difficult to plan, and extremes in climate will increase many costs and lead to increasingly catastrophic events[3].

Food justice has emerged in recent years, particularly during the pandemic, as a major reaction to inequities in food systems, including urban ones. Demands for the inclusion of marginalised populations – indigenous, blacks, immigrants – in decision-making and actions related to their foodways have highlighted power and access issues around UA, leading to calls for more inclusiveness and greater food sovereignty[4]. These calls are likely to get stronger and spread further in the future.

These two significant trends intersect in a couple of ways. In a direct way, climate justice has recently emerged out of the longer history of environmental justice concerns, crossing with the parallel rise in food system critiques, resulting in new light being shed on the relation of UA to climate justice. A second intersection is occurring around the concept of *resilience*. UA is often mentioned as a tool that can strengthen the ability of vulnerable groups and environments to withstand challenges, both environmental and ecological. However, some have questioned whether a presumption of resilience can distract from the necessity of addressing systemic issues, whether about climate or food.

I will conclude with some final words about UA definitions, typologies and trends.

1. *Definitions:* UA is extremely diverse and is understood differently by different people. Being clear about how one is defining it is as important now as it was three decades ago when the concept started to be recognised globally. One person's vision of urban agriculture's scope, purpose, actors, geography and other basic characteristics may differ significantly from another's.

2. *Typologies:* While it is useful to define one's own understanding of urban agriculture and to communicate it to someone else, it is also useful to distinguish different forms of urban agriculture, to recognise patterns, commonalities and distinguishing features. It should be natural, if not essential, to think typologically to make sense of urban agriculture.

3. *Trends:* Since urban agriculture is always changing, neither definitions nor typologies of urban agriculture should be viewed as static. Given the dynamism of urban agriculture, it is useful to look for patterns of change, for drivers of evolution, for types that might be emerging and others that are coming under strain. Analysing trends in urban agriculture can help us understand where it is coming from as much as where it is going.

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[3] For more on this, see Issue 27 of the Urban Agriculture Magazine.
[4] For more on this, see Issue 31 of the Urban Agriculture Magazine.

Gordon Prain

Investing in agri-food system innovation in city regions: what are the opportunities?

There is good evidence concerning the abundance of cropland within urban clusters and in their immediate hinterland and that significant numbers of city dwellers are using that land for food production. Based on a paper and policy brief for CoSAI (2022), this article positions UPA and the potential areas for innovation investment within the context of sustainable city region food systems, including the food environment, consumption behaviour, food supply chains and food waste issues, as well as the policy and institutional environment.

The majority of fresh food reaching urban centres in the Global South comes from the region surrounding the city. The supply of specific crop types and animal products will vary spatially and seasonally across a region. It is widely recognised that perishable, but also nutrient-dense, foods like vegetables and dairy are often produced close to cities in what is known as the peri-urban interface. Of course, there are certainly other important fresh foods, wheat and fish are good examples, that may travel much longer distances to reach city markets.

The peri-urban interface is a dynamic, transitional space around cities. The rural 'outer-edge' of that space, where agriculture is an important income source for individuals and households, is strongly influenced by the city through market linkages. The 'inner edge' of the peri-urban is the area most strongly impacted by urbanisation processes and, along with vacant spaces within the city itself, is where agricultural land is being lost most rapidly.

The agricultural land potentially being lost to urbanisation processes has multifunctional benefits for the city. It contributes to the urban food system and has a lower carbon footprint compared to long food supply chains and provides a range of other ecosystem services that contribute to climate change adaptation and mitigation, to liveability, as well as to accelerating the necessary transition of cities towards circular bioeconomies.

The scale and form of urbanisation can also exacerbate the nutrition and health crisis, with the double burden of under- and over-nutrition especially affecting the poor. The increasing consumption of high sugar, high fat and high salt processed foods is linked to the obesity epidemic documented in cities of the Global South. This health crisis

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is likely to grow since two-thirds of the global population will be urbanised by 2050, and most of that transformation will be in the Global South, often in small and medium cities. Slums now form the major component of urban growth in the Global South, with just over a billion living in these conditions in 2018.

A high priority for investment should therefore be in innovative policies and incentives to protect and boost the use of peri-urban land for food production, and to protect and stimulate access to plots of land within cities for cultivation. These policies and interventions would integrate food and food production into urban planning, not only for the benefit of a more sustainable urban economy, but also to improve the nutrition and health of the urban population. Alongside better protecting agricultural land, local governments need to help boost production through improved agricultural advisory services focused on extending growing seasons with controlled environment agriculture (CEA) and adapted varieties and by increasing access to biofertilizers and biocontrol agents.

A second investment priority needs to target the role of local food production and food marketing in the transition of cities to circular bioeconomies. Innovative production practices and marketing enterprises can help reduce food losses and recover organic wastes from crop and animal production processes as soil conditioner and compost, as well as for feedstock for animals and insect rearing. Probably the biggest challenge and opportunity is to increase safe agricultural use of nutrient-rich wastewater, since urban competition for water between industrial, commercial, agricultural and residential uses will intensify in many parts of the Global South in the coming years. Simple, low-cost innovations are available involving both treatment and improved irrigation practices to reduce health risks whilst enabling farmers to benefit from this urban resource. As part of city region food systems, urban, peri-urban and nearby rural food production is closely connected to market systems and to consumption of food within cities. To help confront both the nutrition and health crisis as well the large scale but often precarious urban employment in the informal food sector, a high priority for investment should be in food market innovations which can offer double benefits. Wet food markets can be repositioned to take a leading role in promoting healthier diets through diversification, for example through the establishment of green markets strongly linked to local production of healthy vegetables and animal-sourced foods, and through upgrading to improve inclusiveness, accessibility, hygiene and more efficient organic waste recovery. Markets can also become knowledge hubs for nutrition and healthy food by locating the healthiest foods in the most visible and accessible stands, making available nutrition information about food products provided by local health clinics and establishing small 'learning corners' to share information about food production, conservation, processing and food preparation. Institutional markets, those providing food in schools, hospitals and other organisational settings, can be encouraged or incentivised to source supplies from local ecological producers, thereby strengthening food sovereignty and the economic viability of these production systems. In the case of schools, sourcing food locally can also be combined with educational outreach.

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Investments are also needed to make the work of the mostly informal vendors involved in food marketing in the Global South more remunerative, safe and decent. Innovations that should be targeted include producer and vendor business schools to upgrade enterprise skills of those involved in food production and marketing, and training in food handling, nutrition and hygiene practices. It should include micro-credit and other financing schemes involving private and public sector efforts to improve access and address widespread concerns among micro- and small agro-businesses about financial risks. Such investments can help expand private-sector involvement in low-cost storage using alternative energy sources, and in alternative food processing opportunities. With the massive spread of cell-phone access, there are many investment opportunities in digital technologies, including to improve communications between producers and vendors to more evenly spread benefits and reduce losses. With these kinds of investments in the local and city region food systems, there is an opportunity for city authorities, in collaboration with the millions working in the informal food sector, to reposition the urban food system itself, towards healthier food and away from high sugar, high fat convenience.

Policy innovation is already underway towards a repositioning of urban food systems, led by the more than 200 cities participating in the Milan Urban Food Policy Pact[1]. Through collaboration with FAO and the RUAF Foundation, they have developed an innovative monitoring and evaluation tool for assessing progress by local governments in implementing food systems and food policy changes (Carey & Cook, 2021). It is recommended that local government application of this tool should be part of any new investment in any of the innovations indicated above. This will help governments, as well as investors, determine how effective the investments are in strengthening UPA and achieving urgently needed food system transformations.

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More information
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Controlled Environment Agriculture for sustainable development: a call for investment and innovation

Jess Halliday

Controlled Environment Agriculture (CEA) can make significant contributions to aspects of sustainable development when the type, systems and control parameters are tailored to the local context, that is the conclusion of a new study by RUAF. There is a need for innovation in policy, technology and business practices to overcome barriers to CEA start-ups and to successful operation in low and lower-middle income countries, and to sustainable and equitable scaling up.

CEA is the production of plants, fish, insects or animals inside structures such as greenhouses and buildings in which environmental parameters such as humidity, light, temperature and CO_2 can be controlled to create optimal growing conditions. Popular techniques include the production of vegetables and herbs in hydroponic systems, the aquaponic production of fish and vegetables and, increasingly, the farming of insects such as Black Soldier Flies (BSF).

To date, the majority of high-tech CEA installations are in high-income, industrialised countries and the term is often associated with fully automated vertical farms in purpose-built buildings or repurposed spaces, such as disused warehouses, underground bomb shelters, office walls and basements, and even on barges.

Nevertheless, some forms of CEA are successfully taken up by entrepreneurs and established farmers in low and lower-middle income countries, including in Africa and Asia. While the CEA techniques used in these contexts may not be as technologically advanced, they show promise in their contribution to sustainable agricultural intensification (SAI) due to the ability to optimise inputs and produce high yields of vegetables and protein.

CEA is not a silver bullet for food security or for agrifood system sustainability and equity, but there is evidence that it can contribute to both. It is unlikely to replace open field agriculture, nor render urban areas self-sufficient in fresh produce, but as a form of urban farming it has the potential to complement rural systems' ability to deliver fresh produce and niche commodities for both low-end and high-end customers. With increased awareness, innovative forms of targeted investment and supportive policies, the application of optimised appropriate CEA techniques in a given context can transform livelihoods and environmental outcomes and contribute to urban diets.

Study findings

The study was commissioned by the CGIAR Research Program on Water, Land and Ecosystems (WLE) as part of evidence collection to inform the Commission on Sustainable Agricultural Intensification (CoSAI). It involved a review of current practices and the future potential of CEA in low and lower-middle income country contexts through a literature review, document analysis and in-depth interviews with 12 CEA practitioners in Kenya, Nigeria, India and Sri Lanka.

The researchers identified several CEA techniques and conditions in which investment may be worthwhile subject to an analysis of the local context, such as climatic conditions, market structure, input availability and policy context. These potential investments include:

- structures and systems using locally available materials, with structural features for controlling the growing environment;
- use of vertical (multi-layer or A-frame) structures to make better use of limited spaces and maximum use of natural sunlight;
- nutrient delivery techniques that require little artificial energy-demanding water movement;
- systems with two outputs that provide dual sources of nutrition and/or income streams; and
- systems that utilise waste streams as inputs.

However, despite the potential, would-be practitioners face significant barriers both to entry and to successful practice of CEA including high start-up costs, lack of training, lack of tailored extension services, poor access to

inputs and post-harvest services due to the lack of value chains, and the inaccessibility/unaffordability of the latest technologies. Further, CEA is usually missing from the policy agenda, resulting in zoning and regulations that do not take account of CEA as a form of urban agriculture.

Recommendations

Key recommendations for investors to support the take-up and development of CEA in low and lower-middle income countries include:

- Start-up financing that includes living costs for an initial period to avoid CEA entrepreneurs using their loans for everyday expenses.
- Dedicated CEA incubators under the agricultural development programmes of grant-making bodies and NGOs, with ring-fenced initiatives for women, youth and disadvantaged groups.
- Support for input and post-harvest supply chain development to ensure CEA practitioners have access to inputs and to the market, and to create additional economic opportunities.
- Support for organisations of CEA practitioners to optimise access to investment, and to enable peer-to-peer support, supply chain development and lobbying, possibly through public-private partnerships for CEA clusters or tech-hubs.
- Investment in training and extension services that are specific to local needs and regularly updated.
- Funded research on optimal technologies for reducing energy consumption, reducing costs, developing and using fewer synthetic nutrient solutions, and more efficient new approaches.
- Overseas trade and development programmes, including exchange visits to encourage and facilitate private companies to invest in new (low and lower-middle income) markets and to conduct R&D trials in these contexts.

In addition, there are several policy recommendations for national, regional and local governments to establish an enabling environment for the CEA sector, including:

- Adoption of integrated policies that promote CEA, including across agricultural development, food security and nutrition, economic development and employment, and land use planning policies.
- Inclusion of CEA in local planning frameworks, including zoning and/or urban agriculture regulations, integration into spatial design and building codes, development of supportive infrastructure.
- Development of evidence-based industry standards and regulations, including standards on nutrients for hydroponic growing (as a reference for customs inspections).
- Establishment of a process for obtaining permits to practice CEA (where required under regulatory frameworks) that promotes ease of doing business.

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CGIAR Resilient Cities Initiative

As part of its new Research and Innovation Strategy to 2030, CGIAR is launching, during the first half of 2022, a ten-year global research initiative on *Resilient Cities Through Sustainable Urban and Peri-urban Agrifood Systems*. This comes in response to the increased and urgent demand from stakeholders for science and research support to address food system challenges and opportunities from rapid urbanisation across CGIAR's geography. The initiative is able to build on more than twenty years of research by CGIAR centres and programmes on several key components of urban and peri-urban food systems, including through the *Urban Harvest* (2000-2010) initiative and the *Water, Land and Ecosystems* (WLE) (2012-2021, in which RUAF partners IWMI and Hivos collaborated) and *Agriculture for Nutrition and Health* (2012-2021) research programmes.

The initiative approaches urban food systems as part of larger urban systems and seeks to understand and help influence the way urbanisation shapes the food system on local to global levels.

With the goal of strengthening the resilience of urban and peri-urban agrifood systems to better deliver healthy diets, job opportunities and healthy environments for the urban poor, the initiative will support research and innovation around five entry points:

- Making urban and peri-urban food production more efficient, safer and more sustainable by improving smallholder access to better technologies, practices, services and clean production environments;
- Improving informal urban food markets and rural-urban supply chains through access to appropriate technologies (storage, processing) and business development services that strengthen economic opportunities for women and youth;
- Improving urban food environments and creating demand for, and access to, healthier diets for the urban poor to counteract the rising double-burden of overnutrition and undernutrition, and diet-related non communicable diseases (NCDs);
- Supporting innovations, driven by public-private partnerships, for a circular bioeconomy by turning urban food waste and wastewater into safe and efficient resources for food production; and
- Developing improved research capacities and tools to support governance, innovation services and investment planning for sustainable agrifood sector growth.

The key to the success of the initiative will be partnerships with research and innovation partners from universities, the private sector and civil society, as well as with upscaling partners from municipalities, regional and global city networks, and national governments. Priority countries during the first three years include Bangladesh, Ethiopia, Ghana, Kenya, Philippines and Peru, alongside other countries with ongoing CGIAR research. RUAF is a partner in this initiative and, at the global level, the initiative will work closely with RUAF, FAO Green Cities and MUFPP amongst others.

In the current context of institutional integration of the CGIAR, the new initiative will be able to draw on expertise, technologies and methodologies across all CGIAR centres and programmes to pursue an integrated agrifood system approach and act as a single CGIAR partner for collaborators and stakeholders.

Urban Agroecology as a way forward for Urban Agriculture?

Henk Renting
René van Veenhuizen

Agroecology is a dynamic and inspiring concept that has gained prominence in scientific, agricultural and political discourses in recent years. It is increasingly considered as a promising approach that can contribute to transforming food systems by applying ecological principles to agriculture and ensuring a regenerative use of natural resources and ecosystem services while also addressing the need for socially equitable food systems within which people can exercise choice over what they eat and how and where it is produced.

However, agroecology is not a straightforward concept and its most satisfactory interpretation is contested. The most commonly used definition of agroecology is 'the application of ecological concepts and principles to the design and management of sustainable agroecosystems' (Altieri, 1995). Furthermore, the concept of agroecology has evolved both as a scientific discipline and also through farmers' practices that preserve the resilience and the ecological, socioeconomic and cultural sustainability of food systems and, additionally, as a bottom-up social movement of farmers and other practitioners across the globe who have collectively defined what the main principles of agroecology are.

Although agroecology has been on the policy agenda for a considerable time, it is in the last 5-10 years that it has received increasing attention and debate as a promising approach in food systems transformation. In this, the debate on agroecology has been broadened in a number of ways. First, from a strongly rural-centred concept, associated with grass-roots movements of small farmers and peasants, agroecology it now mentioned in several high-level publications and in international debates (see, for example, HLPE, 2019 and the 10 or 13 principles published by FAO and SDC[1]). These frameworks emphasise its potential contribution to the transition to resilient food systems, and the importance of integration, diversification, building agency and stakeholder engagement. Urban Agroecology has clearly become a key topic in debates on the future of sustainable agriculture and food systems[2].

Second, the agroecology approach has gradually gained attention in debates on urban agriculture and urban planning. The idea of urban agroecology, as introduced in the aforementioned UA Magazine 33, has received much support, but at the same time it is apparent that much

still has to be done to truly connect the areas of urban development, agriculture and agroecology. Pothukuchi and Kaufman's (2000) observation that "the food system is a stranger to the planning field" is still largely true twenty years later. Although there is considerable reference to urban agroecology, in practice the policy areas of urban planning and the development of sustainable urban agriculture remain fragmented and largely disconnected.

It remains open to discussion how political agroecology should be interpreted and what system changes are involved. In addition, agroecology and other regenerative approaches remain contested, and are still viewed by many as 'alternative' and sometimes as in direct opposition to conventional farming. In addition the dominant agricultural policies that lack an understanding of added value or true cost calculations place barriers to agroecology.

There is a need to be more comprehensive, find connections and establish concrete ways to advance urban agroecology. An interesting building block for this was developed by The Global Alliance of the Future of Food (GAFF) who critically assessed the viability, profitability, scalability and the evidence available for agroecological approaches. This GAFF compendium[3] provides insights into the available evidence and knowledge and "tackles the narratives and questions that undermine action and mislead the public about what's possible". A major lesson is that "the evidence in support of agroecology, regenerative approaches, and Indigenous foodways exists in a battleground — one of many over knowledge and power".

The GAFF compendium assesses this evidence based on five questions, whether agroecology (and similar frameworks) can: feed the world; achieve scale; support meaningful livelihoods; solve the climate, biodiversity and soil crises; and whether they are important in food systems transformation. To do justice to this would go beyond the space available here, but the following promising angles are worth exploring further:

- Measuring performance and resilience through a systems lens to show the multifunctional benefits of these approaches.
- Successful upscaling is happening right now. Social movements are key forces for change and participatory and multi-actor approaches are crucial.
- These approaches generate higher levels of stability in income and employment than other forms of production — and without depending on subsidies or incentive measures.
- Systemic problems require systemic solutions. The dynamism and inherent capacity of agroecology, regenerative approaches and indigenous foodways enhances climate and ecological resilience.
- Systems transformation is heavily linked to challenging the deep structures of the status quo. This opens up the discussion around food sovereignty and agency, highlighting the ways that governance, at all levels, plays a critical role in accelerating or hindering agroecological transitions.

Urban agroecology provides an interesting framework to better understand and design sustainable urban and regional food systems. Further exploring this with cities around the world and documenting concrete experiences with putting urban agroecology into practice will prove valuable.

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[2] For more on this, see Issue 33 of the Urban Agriculture Magazine
[3] https://story.futureoffood.org/the-politics-of-knowledge/

The Urban and Peri-Urban Agriculture Sourcebook: From production to food systems

The global population is estimated to reach 9.7 billion by 2050, 70 percent of whom will be living in urban areas. This rapid process of urbanisation and population growth will directly lead to increasing numbers of people to feed in cities, while indirectly leading to a rise in unhealthy diets and consequent health issues such as overweight, obesity and diet-related diseases. At the same time, the population suffering from food insecurity and malnutrition is on the rise. Currently, more than 700 million people are experiencing severe food insecurity of whom the majority are located in sub-Saharan Africa and Southern Asia.

Urban and peri-urban agriculture (UPA) is increasingly recognised as a key component of building the resilience of local food systems as it diversifies food value chains, improves the livelihood of city dwellers, and brings about multiple benefits for sustainable urban development through local food production and shorter supply chains. Growing research and increasing awareness of the variety of production systems and practices in many cities and regions is bringing to light the significant contributions made by UPA, especially during the COVID-19 pandemic.

FAO, Rikolto and RUAF, with a key contribution from Ryerson University, launched the "Urban and peri-urban agriculture sourcebook: from production to food systems" publication. This catalogues, organises and analyses various existing UPA typologies, cases and examples at the global level. The aim is to set out key lessons and provide guidance for a diverse range of actors involved in local food systems, particularly decision-makers, planners and practitioners responsible for planning and implementing UPA schemes.

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Why urban agroecology needs an agroecological urbanism

C.M.Deh-Tor

'What if solidarity, mutual learning, interspecies (more than human) exchanges, environmental stewardship, food sovereignty and people's resourcefulness were the principles of a new paradigm for urbanisation? How would urban design, property regimes, food provision, collective services, and the whole ensemble of planning and socio-technical arrangements change, if they were informed by urban agroecology? How can we begin to radically transform the food-disabling urban landscapes that have systematically displaced food production, recovering both historical food growing practices and imagining new urban arrangements?' (C.M. Deh-Tor, 2017)

Four years ago, this paragraph opened our call for a *Forum for an Agroecological Urbanism* in the RUAF Magazine's thematic issue (no. 33) on Urban Agroecology (RUAF, 2017). Our call was to explicitly look at the transformative power of political agroecology and how this could be mobilised to reshape dominant urban patterns, while recognising that the agroecology movement is not an urban movement. We still stand by our position that a fair, healthy, ecological and durable urban food system is not possible in the context of urbanisation as we know it today: a sustainable food system will require a different kind of city, different from the kind that has been produced through capitalist urbanisation.

This is why we do not subscribe with unqualified enthusiasm to urban agriculture. Urban agriculture has the merit of breaking the divide between city and country by reintroducing food production in an urban world dominated by the interests of food consumption. However, many renderings of urban agriculture leave the way cities are organised untouched, and by and large aim to retrofit food production on rooftops, on derelict land, in existing public spaces, on facades etc., without taking a position on how such food is grown and by whom, and who consumes it. By calling for an urban and political agroecology we sought a more explicit positioning of cultivating practices that puts soil stewardship, social justice and care for more than humans at their core, sowing the seeds for alternative ways to shape human interdependencies in urban contexts. Ours was a call for moving beyond a 'food-in-the-city' perspective, and to shape alternative urbanisms away from the current urban status quo.

In the four years that have passed since we wrote that piece, we have had the opportunity to lead the Urban Europe and Belmont Forum funded project *"Urbanising in Place"* (www.urbanisinginplace.org) that has aimed to explore the politicising of trajectories with marginalised
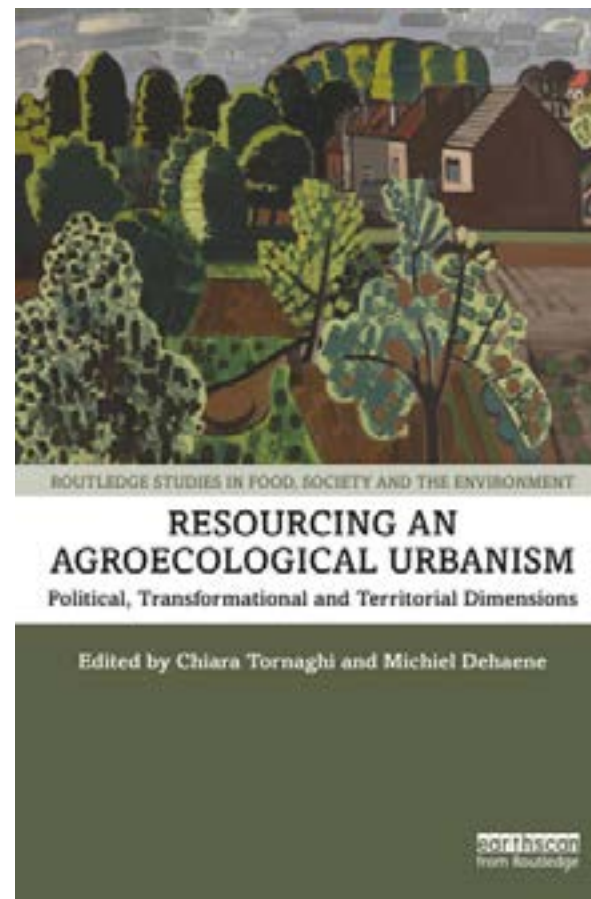
peri-urban farmers so as to enable them to fully exercise their stewardship role as caretakers of critical resources such as soil, food, water and energy. The project has actively brought into the conversation the urban world of sustainable food planning and the land-based political agroecology movement. The unfolding of this project has brought to the fore that, despite multiple discussions on rural-urban linkages, the many initiatives supporting short food chain models and the framing of food planning in a regional food system perspective, urban food policies - with some notable exceptions - fail to meaningfully include food growers, and do not even begin to challenge the mechanisms of urbanisation that continue to evict and marginalise farmers in peri-urban areas. This has convinced us of the need to argue more than ever for the 'urbanism' component of agroecological urbanism, that is on ways of inhabiting the world that are not at odds with the principles of agroecology but built on them.

Urban development policies preach land conservation but green field development continues, with the ongoing destruction of fertile land. Housing interests, in particular, prevail over agriculture in urban policy making. Worse, building on cheap land, which is often agricultural land, continues to play a key role in the pursuit of affordable housing. The misconstrued attempts to fight urban sprawl by looking at the countryside as land without people, and as somewhere to cater for nature development and recreational goals, are part of the problem, rather than of the solution. Such policies reduce the possibility of farmers living close to their farmland. Nature development goals (biodiversity preservation, reforesting etc.) are realised on farmland, and contribute to a segregated geography of arable land locked in between green and blue corridors and islands of biodiversity. In all of these patterns, we see the continuation of strong geographical and mental divides that are reproduced in the way planning policies are broken down in the sectoral divide between housing

agriculture and nature policies, and also in the economic divide between producers and consumers. The question of how to live together – the urban question if you want – needs to be posed differently, with equal emphasis on 'live' and on 'together'.

Through the Urbanising in Place project, we have worked with real communities of practice, in London, Rosario, Brussels and Riga, working around agroecology in a food policy context. We have tried to systematise the insights from this work in eight building blocks to achieve agroecological urbanism (Dehaene & Tornaghi, 2021). The building blocks attempt to map shared matters of concern at the intersection of food planning and political agroecology. They are not intended as a cookbook, but rather as a set of lenses through which to structure the political work required for the rearticulation and transformation of urban food policy as a key element in the creation of a fair, ecologically sustainable, agroecological urban food system.

The building blocks set out to substantiate the importance of moving together on the urban and rural fronts, and to build the necessary solidarity between agroecological growers and urban constituencies. The building blocks attempt this by:

ROUTLEDGE STUDIES IN FOOD, SOCIETY AND THE ENVIRONMENT

RESOURCING AN AGROECOLOGICAL URBANISM

Political, Transformational and Territorial Dimensions

Edited by Chiara Tornaghi and Michiel Dehaene

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- Building relations between what happens on and off the farm. This is particularly pertinent for farmers working in highly fragmented farmlands, where relations need to be built at the landscape level in light of nutrient cycling, but also to handle the logistics of complex urban food supply chains.
- Addressing questions of land access: training and access-to-market are part of the same equation. Here, one is working towards more integrated support for farmers, including through the integration of policies and initiatives around these multiple frontiers.
- Highlighting the potential of publicly owned farmland as an opportunity for urban authorities to have a position within a territory that goes beyond their administrative boundaries, and to participate in the construction of a new urban and peri-urban land use map in which farming is actively promoted.
- Systematically reviewing urban public policy from an agroecological perspective, interrogating various areas of local public policy with the aim of removing obstacles and creating an enabling environment for agroecological food production. This includes measures related to organic waste recycling and composting, the potential development of a municipal seedbank, the prohibition on using agrochemicals around urban areas, the management of greenbelts and large tracts of urban farmland, and more conventional measures around public procurement such as public catering.
- Investigating community initiatives at the intersection between food production and food consumption that incorporate the social principles of agroecology (i.e. social justice, respect for cultural diversity, solidarity economies, anti-patriarchy, food sovereignty) with a particular focus on exploring how they develop neighbourhood infrastructures and promote value shifts in the way urbanites relate to food. This includes, for example, landed community kitchens, territorialised food hubs and community-led political pedagogy work.

The eight building blocks will be made available around mid-2022 in an online resource at the end of the *Urbanising in Place* project.

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We need to talk about urban soils

Dionysios Touliatos
Joy Carey

"Good food, safe water, healthy bodies, flourishing biodiversity, thriving communities, a planet in balance: these are the everyday gifts of living soils." **(Miche Fabre Lewin, Touchstone collaborations, Bristol, 2015)**

For centuries, land in and close to cities has provided possibilities for urban and peri-urban agriculture (UPA). UPA is practiced in a fascinating diversity of ways and scales in most cities around the world. Numerous research papers, case studies and articles cite examples of UPA, set out evidence for its multifunctional social, economic and environmental benefits and call for urban policy support to reap the benefits of this unique multifunctionality as a way of building future resilience.

One cannot properly plan and improve urban food systems without considering urban food production, or UPA, and we cannot fully optimise the potential of UPA without considering land availability and soil quality. However, there is currently only very limited strategic attention given to the health of urban soils. Most food strategies mention the value of UPA, and the need for access to land, but fail to mention the importance of taking care of living soils. Although UPA high-tech approaches, such as vertical farming, could potentially support soil conservation by sparing land (Muller et al., 2017), it is still imperative that we adopt ways to regenerate and enhance the health of urban soils since the use of synthetic fertilisers, unsustainable growing media and materials, and the energy requirements of these systems can compromise their sustainability (Touliatos et al., 2020).

Our urban lens is focused on green and blue infrastructure that is visible above ground level and so, although the soil ecosystem is essential to everything else, it remains largely unacknowledged and invisible. As with air and water quality, should cities develop a policy on soil quality? It is time we all talked much more about urban soil health.

Soil health, or quality, is the capacity of a soil to function within ecosystems to sustain biological productivity, maintain environmental quality and promote plant, animal and human health (Nakajima, 2020). Urban soils are the foundation of an ecosystem's functioning in urban spaces, and are becoming increasingly important in the delivery of a plethora of ecosystem services. These include carbon storage and climate regulation, nutrient cycling, biomass provision for food and materials, flood mitigation, recycling of wastes and detoxification, as well as spirituality, a sense of place and aesthetics for urban dwellers (O'Riordan et al., 2021).

With the increasing recognition that sustainable cities need to genuinely encompass the natural world, emerging narratives call for a change in mindset around urban identity and the need to reimagine urban (and food system) planning. For example, 'agroecological urbanism' is inspiring a fundamental rethink of the purpose of urban centres: asking how they can become positive generators of health, connection and circular innovation (e.g. composting of urban food waste to recapture nutrients), rather than negative generators of health and ecological problems. (Tornaghi & Dehaene, UAM 33 article p. 8, 2017).

In 2015, the international year of soils, a group of people in the city of Bristol, UK produced an urban soil declaration[1], possibly the world's first. This was in part a response to plans to use an area of best quality agricultural land and soil within the city boundary for public transportation improvements. While those involved found the process a valuable and educative experience, ultimately its impact at the time was negligible. Rather, it highlighted the challenge of how citizens can have a meaningful conversation with decision-makers on the importance of protecting and regenerating urban soils.

In making a stronger case for an urban soil health policy, it is helpful to review what types of discussions are already happening. Although soil health is often considered a high priority in urban agriculture communities of practice (Salomon et al., 2020), there is a disproportionately low number of studies on maintaining and enhancing soil health in urban, as against rural, settings (Moskal & Berthrong, 2018). Rather, most urban soil studies have focused on soil pollution and the potential risks to populations who consume food grown in urban soils (Lal, 2020). Despite this, it is questionable whether these risks outweigh the multiple health and societal benefits of UPA (Leake et al., 2009). Although improving and enhancing the diversity of soil-living organisms is imperative for soil health and quality, only a few studies on the biological quality of urban soils have been carried out (Guilland et al., 2018). Clear parameters for good urban soil health are needed (Salomon et al., 2020). Various studies, using multiple soil health indicators, have investigated the extent to which urban farming is, or could, increase soil health (Lewis, 2019; Santorufo et al., 2012; Tresch et al., 2018) and there is some evidence that urban horticulture can, over time, influence soil quality through cultivation

[1] Bristol's first draft of our first city Declaration for Soils.
https://www.arc2020.eu/wp-content/uploads/2016/05/Bristol-Declaration-for-Soil-20151.pdf

techniques (Bretzel et al., 2018) and also enhance ecosystem services provided by soils in UK cities (Dobson et al., 2021).

In the light of all the discussions to date, urban soil health has surely to be a critical focus point for cities: for good quality nutrition and food security as well as contributing to dealing with climate change. One can ask:

- What might happen if cities decided to include urban soils in their strategies to address the impacts of climate change?
- What might be the benefits for a city of including soil health considerations in strategic food system planning?
- If urban soil health had its own policy, what might that entail?

Drawing together various aspects of work already happening in this area, a soil health policy or strategy might entail the following elements.

- Map the land available
- Assess soil quality and types of remediation required
- Agree key indicators of urban soil health
- Scale up nutrient recovery from city waste including composting
- Equip urban growers with soil health knowledge and practical expertise
- Enable citizens to make good quality compost in gardens and allotments
- Provide technical support and monitoring of soil health improvements
- Support strategic soil health improvement plans for specific areas of the city
- Support and promote safe alternative practices to the use of harmful pesticides, herbicides and fungicides
- Audit citywide improvements over time
- Bring together scientists and food system stakeholders to pool expertise and knowledge and to develop new initiatives.

In taking this discussion a step further, we would like to call for cities to start building a soil health conversation into their food systems planning processes in this coming critical decade, and to pose three important starting questions for these new soil-focused conversations.

I) Have we yet really understood and harnessed the full multifunctional potential of UPA?
II) What further (action) research would increase our understanding and enable cities to reap more of these multifunctional, especially environmental, benefits?
III) Is there a need for cities to create policy/strategy specifically on soil quality and soil health that are integrated within wider food system strategies in the same way as a city might view water or air quality?

RUAF would be very interested to hear from cities that are already addressing soil health or that are keen to do so. We believe there could be productive new collaboration on these issues.

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Credits: ©Pops Lopes

Sustainable land use: food security starts with the soil

'We need to act now, and we need to act in global solidarity.' (Cem Özdemir, German Federal Minister of Food and Agriculture)

On 28 January 2022, 68 agriculture ministers from across the world agreed at the 14th Berlin Agriculture Ministers' Conference, part of the Global Forum for Food and Agriculture (GFFA), to adopt ambitious goals to protect the planet's soils.

Agreeing to abide by the contents of a final communiqué, the first of its kind, ministers set ambitious targets and demonstrated a dedication to ramping up efforts to stem soil degradation. 'We stress that healthy soils are key in order to combat the global challenges of our times, in particular the production of sufficient nutritious and safe food, adaptation to and mitigation of climate change, and the halting and reversal of biodiversity loss. We also emphasise the importance of ensuring a holistic approach, jointly tackling environmental, economic and social issues. We underline that **sustainable land use** by all sectors and **sustainable soil management** are crucial for the contribution of agriculture to all SDGs.'

Some of the key points include:
• Soils must be protected.
• Progress must be made with climate change mitigation and climate adaptation.
• Soil biodiversity is vital for healthy soils.
• As global land resources are limited, they need to be managed sustainably.
• Fair, rights-based, access to agricultural land should be guaranteed.
• Investment, breeding, research, innovation and digitalisation can play a significant role in making soil use more sustainable.
• Resilient and sustainable food systems must be supported.

This communiqué was presented to the leaders of four international organisations: UN Food and Agriculture Organisation (FAO); UN Convention to Combat Desertification (UNCCD); Committee on World Food Security (CFS); and the Global Soil Partnership (GSP) Plenary Assembly.

More information:
Download the communiqué: https://www.gffa-berlin.de/wp-content/uploads/2015/10/gffa-2022-kommunique-en.pdf
Summary statement: https://www.gffa-berlin.de/en/berliner-agrarministerkonferenz-2/

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Urban waste and agriculture: a win-win for farmers and for the city?

Cities constitute vast consumption hubs generating mountains of organic waste and wastewater with a correspondingly high resource recovery potential. Here, urban waste reuse has always been described as a key benefit of urban farming (Smit et al., 1996). Reuse activities range from wastewater use, landfill mining to community-based waste composting and a general use of any manure available. While the benefit for farmers is obvious (otherwise they would not seek out the resource), the benefit in terms of waste reduction for the city will depend on the absorption capacity of agriculture, i.e. the scale on which it can be used, and, also its quality, as its use is often questioned given the health risks linked e.g. to wastewater irrigation. In other words, the relationship is not straightforward.

Municipal waste collection, of which organic or food waste usually constitute over 50% in low- and middle-income countries, constitutes a significant burden for urban waste management, consuming a large part of the municipal budget while still seen as performing poorly. The same applies to sanitation, i.e. wastewater management, where sewage sludge as well as septage constitute the end products of the food chain.

In this context, resource recovery and reuse (RRR) has often been postulated as a win-win situation, supporting farmers in dire need of crop nutrients or water while reducing waste volumes or offering opportunities for private sector investment in waste management, which could ultimately improve the sector's overall performance. However, is this improvement wishful thinking? As public budgets are constrained and waste management revenues (household fees) usually very limited, authorities are hesitant to invest in new endeavours that cannot recover at least their own costs.

However, full operational cost recovery, in an analysis of 13 municipal compost plants in Sri Lanka, appeared rare, varying widely from just 3% to 106%, due to poorly developed compost market penetration strategies and a lack of related partnerships as key shortcomings (Fernando et al., 2014). In general, the situation is similar in the sanitation sector. In India, for example, the percentage of the operational costs recovered in faecal sludge (FS) treatment and composting through the sale of FS compost ranged from 6% to 215%, but seldom reached 100%, although this did not include savings in 'safe disposal' fees through the waste volume reduction achieved through composting (Rao et al., 2020).

To address this challenge, research has moved over the last decade from technical solutions to business modelling linking the sanitation, solid waste and agricultural sectors (Otoo & Drechsel, 2018). Most practical experiences to date relate to organic municipal waste composting, or co-composting with faecal sludge, which results in a safe and nutrient-rich organic fertiliser (Cofie et al., 2016), which in many countries has moved into being implemented through Public-Private Partnerships (PPP) operating at the scale of suburbs or larger city areas.

While these efforts support Sustainable Development Goal (SDG) 12.5, a second research thrust is targeting safe wastewater reuse (SDG 6.3). The focus here is less on promoting new reuse, but on the common reality of already ongoing reuse of diluted or raw, and seldom treated, wastewater in the informal irrigation sector both within and downstream of cities. As the area affected is globally millions of hectares larger than all the planned reuse schemes using safely treated wastewater together (Drechsel et al., 2022), the emphasis has been on the transition from unsafe to safe reuse, an area where RUAF's partner, the International Water Management Institute (IWMI) has worked in close collaboration with WHO and FAO. Despite some investment in wastewater treatment, especially in emerging economies, wastewater treatment in most low-income countries remains far too low to prevent severe health risks for farmers and consumers. Research into 'non-treatment' options to reduce risks in the 'farm to fork' chain, especially where irrigated vegetables are eaten raw, has resulted in a large variety of recommendations for farmers, traders, and kitchen staff (Amoah et al., 2011), which have eventually been promoted through WHO and FAO guidelines.

To understand how far these investments in resource recovery and/or safe reuse have generated the desired solutions and impacts, and where the remaining research gaps are, the following questions and answers could prove helpful:

1) Is informal irrigation with wastewater safer today than before the related research started 20 years ago?

There is as yet no evidence that farming practises and resulting vegetable contamination levels have improved, at least in Africa. The adoption of the WHO (2006) guidelines for safe wastewater irrigation, which introduced health-based targets (in contrast to irrigation water quality thresholds) and calls for non-treatment options, has been slow, given the overall complexity of the guidelines. WHO's investments in sanitation safety planning has helped to operationalize parts of the guidelines while a significant gap relates to options to change the behaviour of stakeholders with a low risk awareness. This is important for the adoption of risk reduction measures without direct financial benefits given the tiny (niche) market of risk-aware consumers. Unless this gap can be addressed with context-specific incentives, nudging, or social marketing, as well as supportive regulations, the developed safety measures will remain on the shelf and consumer health risks will not be reduced until restrictive regulations or treatment capacities are catching up (Drechsel et al., 2022).

2) Can we today better close the rural-urban nutrient loop than in the past?

In low-income countries, composting projects have often been overly technology-driven without sufficient consideration given to market dynamics, demand, and financial sustainability beyond a subsidised pilot phase.

Credits: ©P. Drechsel

Today, the importance of business thinking, including in traditionally fully subsidised sectors, is increasing and we have guidelines for RRR feasibility studies which consider input and output markets, finance, technology, institutional capacities, regulatory frameworks, risks etc., all of which are seen as important for the successful implementation of circular businesses (Otoo et al., 2016). However, while waste is generated every day, fertiliser demand is seasonal. Thus, the waste absorption capacity of agriculture, and thus the impact on urban waste volumes, will remain limited, especially in larger cities. Another limiting factor is compost transport costs to supply farmers beyond peri-urban areas.

3) Which RRR businesses have a high potential for cost recovery and upscaling?

The answer to this is both case and context specific (Diener et al., 2014). It depends on factors such as the ability to enter a competitive market (quality and price of the product), the regulatory environment that might subsidise chemical fertilisers, and economies of scale. In short, it is a question of the value proposition, the market and the enabling environment. Empirically, the most promising results for cost recovery relate to energy recovery, followed by nutrient recovery, and least of all to water reuse in irrigated agriculture. As water in many countries is highly subsidised, and irrigation water very cheap and often free, charging farmers in such a context for reclaimed wastewater will prove challenging if not impossible. As a consequence, many wastewater reuse models are largely

social models, which are economically strong but fall short in terms of financial sustainability unless the societal benefits are internalised. Cost recovery can be much more promising if the wastewater undergoes advanced treatment and can be sold to local industries for uses such as cooling, power generation or air-conditioning, or exchanged for freshwater in rural-urban water swaps where the urban sector will pay for the infrastructure needed to either pump the wastewater to the farmers or the released freshwater to the city (Otoo & Drechsel, 2018). There are other reuse-based systems that also fit a less sophisticated technical context and can cover operational costs or more, such as in the production of fish or fish feed (Amoah et al., 2021).

4) How realistic is the assumption that RRR businesses can subsidise other parts of the waste or sanitation service chain?

An analysis in Sri Lanka showed that even where a reuse sub-system based on FS co-composting can cover its costs over the system's lifespan, the revenues from reuse will only make a small contribution to wider system costs linked to septage containment, emptying/transport and treatment (Carrard et al., 2021). As such, while resource-orientation sanitation can improve the overall benefits of the sanitation service, and partially offset the required public investment, additional finance will be required to ensure the viability of upstream parts of the sanitation service chain as preconditions for successful reuse (Diener et al., 2014; Carrard et al., 2021). In other words, RRR will be of greater benefit to farmers than to the sanitation sector, and indeed then only to farmers if the market (e.g. for compost) is not already saturated. However, there are notable exceptions, such as the above-mentioned aquacultural systems where revenues from reuse might even recover the capital costs of the treatment plant (Amoah et al., 2021).

To summarise, the evidence to date suggests that the reuse of usually free waste resources in urban and peri-urban farming is a common reality but serves primarily the farming community, and only indirectly the city or consumer. It seems only likely to achieve a significant scale from a public waste management perspective in smaller towns surrounded by agriculture. Furthermore, the often-described health risks from wastewater irrigation remain a challenge as does the dependency of RRR on public subsidies.

Financial cost recovery continues to be a key issue. Returns on investing in RRR can vary widely, but seem unlikely to drive large improvements in sanitation or waste management unless entrepreneurs are provided with an opportunity to monetise the economic benefits for society and for nature, benefits which are fully internalised by society but usually lack a direct market value. These payments will have to come from those entities which benefit most such as public health. There are many options in terms of governmental instruments which could help an enterprise in terms of cost savings (e.g. tax exemptions)

and increased revenues (e.g. carbon credits, subsidies, payments for environmental services) aside from indirect options of support.

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The cost of the food we waste: how to change behaviours?

Mohamed Aheeyar
Pay Drechsel

Households do not always realise how they contribute to greenhouse gas (GHG) emissions, even those committed to using renewable energy at home. However, we all eat, and the food waste dumped on urban landfills is considered to be the third major anthropogenic source of methane. Reducing organic waste (especially food waste) and increasing resource recovery for reuse could help mitigate three billion tons of GHG emissions, while recycling nutrients for agriculture.

Globally, around a third of the world's food, worth billions of dollars, is wasted each year. According to the Food and Agriculture Organization of the United Nations (FAO), this is enough to feed about two billion people - more than twice the number of undernourished people across the globe. Reducing food waste and losses is key to ending global hunger, fighting climate change and fostering healthy food systems; and every person, school, restaurant and food retailer can be part of the solution. A big challenge is, however, how to convey this message?

In their blog, Aheeyar and Drechsel show how, in Sri Lanka, the International Water Management Institute (IWMI) and FAO joined hands in working towards a national roadmap for food waste reduction, targeting in particular supermarkets, hotels, restaurants, food caterers and schools. This work showed that it is important that stakeholders understand their direct "stake" in the challenge, in particular the financial implications of wasted food, and the options they have to minimise losses. Aheeyar and Drechsel argue that the quantification of food waste in order to identify hot spots for interventions is crucial, but must be accompanied by capacity development for the stakeholders on methodologies and tools for measuring, valuing, monitoring and reporting. A technical brief accompanies the blog: https://cgspace.cgiar.org/handle/10568/115189

More information
- Based on a blog by Mohamed Aheeyar, Researcher at the International Water Management Institute (IWMI), and Pay Drechsel, Research Quality Advisor at International Water Management Institute (IWMI), at: https://wle.cgiar.org/thrive/2021/11/12/what-cost-food-we-waste-and-how-can-we-change-behaviours-address-growing-challenge

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Credits: ©Natalia Palomino/Rikolto

An inclusive business approach for sustainable urban food chains

Charlotte Flechet
Josephine Ecklu

In 2020, when COVID-19 transport restrictions hampered global food distribution channels, the world rediscovered the value of localised food systems and many consumers were forced to rush to their local food providers to get their weekly supply of fresh food. While it is unclear whether this local food trend will last in the new normal, it is evident that many local authorities are looking into how they can promote and strengthen local food supply chains as part of their resilience strategies.

Inclusive business models that implement a rights-based approach
The role of local authorities in creating a favourable environment for local healthy and sustainable food chains to blossom is increasingly being documented. However, they cannot do this alone. While they can create strong incentives for change through obligations, restrictions, taxes and subsidies, economic actors such as retailers, institutional buyers and other food companies also have powerful cards to play thanks to the power of their purse.

For healthier and more sustainable food to reach urban markets, there needs to be incentives for all actors in the chain to modify their behaviour. Without a good and profitable business model that works for everyone, and especially smallholder farmers and buyers, sustainable food chains are unlikely to be scaled up. As such, inclusive business relationships involving urban buyers, processors and rural, peri-urban and urban producers can be a powerful enabling factor in the transition towards sustainable food systems in cities and beyond.

However, in many cases, the efforts by the private sector and authorities are disconnected. Collaborations take place on an ad hoc basis depending on specific opportunities, often without a long-term strategic vision. To maximise the impact and create change on a large scale, more synergies are needed, which require more connections and dialogue. This is why it is essential for public authorities to establish strategic frameworks to guide private sector investors towards more inclusive business models that contribute to realising both citizens' right to food and producers' right to decent work, and also create transparent and accountable spaces where public and private actors can work together to develop new ways of bringing more sustainable and equitable local food to citizens' tables. One area where this type of collaboration is needed is at the level of traditional markets. In many parts of the world, these are citizens' preferred shopping places, where they can find fresh foods close by and at an affordable price. These markets are essential to ensuring food security and healthy diets, but their produce rarely offers any traceability or quality guarantee. Any initiative that would seek to upgrade these markets to increase food safety, traceability and the provision of locally produced quality food would require close collaboration between private and public actors, guided by a shared vision and an innovative governance mechanism.

To date, inclusive business approaches have mostly been used in the context of global value chains such as coffee or cocoa, and less so in the context of local or urban food supply chains. At Rikolto, one of our priorities is to explore and test how inclusive business principles can be integrated into the food sourcing models of key urban buyers: supermarkets, institutional kitchens, e-commerce platforms and, of course, also traditional markets (although we are acutely aware that untangling supply networks will be an incredible challenge).

When combined with efficiency-enhancing measures to help cut additional costs throughout the food chain (e.g. from intermediation, food losses or expensive inputs), inclusive business models have the potential to bring the rights-based approach to life by guaranteeing decent work and income for producers, while enabling consumers to exercise their right to safe, healthy and affordable food.

What is inclusive business?

According to the World Business Council for Sustainable Development, an inclusive business is an economically profitable, environmentally friendly and socially responsible entrepreneurial initiative that integrates low-income communities in its value chain for the mutual benefits of both the company and the community (SNV & WBCSD, 2011). Profitability for all actors is a condition for sustainability and is necessary for healthy and sustainable urban food chains to function autonomously. At Rikolto, we use the LINK methodology[1] developed by the International Centre for Tropical Agriculture (CIAT) and other organisations within the Sustainable Food Lab to guide our efforts to foster more inclusive food chains and

business models. The methodology is usually applied by all chain actors with the support of an external facilitator and is underpinned by six principles:

1. **Chain-wide collaboration:** cooperation between all chain actors with a **common goal**. To be successful, there needs to be added value for everyone. In many cases, a good price is considered one of the most important values, but it is not the only one: stability and market security are sometimes as attractive as money.
2. **Effective market linkages:** new relationships between all the chain actors leading to a **stable and profitable market** for farmers and a reliable supply for buyers. These relationships must be underpinned by strong feelings of trust and can sometimes be translated through formal agreements. In any event, there should be a commitment to solve problems together. As side-selling is often a major hurdle, this requires strong local actors (such as a farmer organisation, a company or a government-sponsored food hub) to establish an attractive business offer that farmers will accept. In addition to price, a strong offer can include direct payments, training or access to capital.
3. **A fair and transparent sourcing policy:** defining and applying clear and consistent quality standards to meet consumers' increasingly high expectations and making commitments to buy and sell set quantities at certain times. Recognising the mutual interdependency between chain actors, inclusive business requires an equitable risk management process.
4. **Equitable access to services** including credit, technical support, business development support and market information. These are essential to boost productivity, quality and food safety and to reduce the negative impacts on the environment. This is especially critical when local banking systems do not offer affordable loans to farmers and other small chain actors. These services can be provided by the buyer directly, or by an actor from the wider environment (such as government or civil society).
5. **Inclusive innovation:** not "for" but "with" farmers so they remain competitive and improve the commercial value of their produce. For example, young people can be supported to set up business units arounds the innovative techniques or practices developed in the chain such as organic fertiliser or digital data management for traceability and quality assurance. The process itself can also be innovative such as by developing step-by-step plans to make the chain more inclusive.
6. **Measurable results:** the incorporation of tailor-made indicators and monitoring plans to measure the effectiveness of the business model on an ongoing basis and share the results openly with chain actors. Decisions on how to improve should be made cooperatively. This can inspire others to follow suit.

The box on the next page provides an illustration of these principles being put into practice.

[1] https://cgspace.cgiar.org/bitstream/handle/10568/49606/LINK_Methodology.pdf

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Shortening the road between farmer and consumer in Tanzania

*East Africa Fruits is a social enterprise whose mission is to improve smallholder farmers' access to urban markets by modernising the supply chain and demand logistics. Focusing on the market in Dar Es Salaam, the company has put in place various inclusive business strategies and is working with 5,000 banana, onion and tomato farmers from the Kilimanjaro region. First, it set up several **collection centres** close to farmers, directly picking up their produce and bringing it to these collection centres, and investing in upgrading farm infrastructure. Second, it mobilised the collection centres to organise **training** to improve farmers' productivity, produce quality and production sustainability. Third, having removed middlemen from its own supply chain, East Africa Fruits **directly supplies market vendors** and other buyers from its main storage and distribution facility in Dar Es Salaam. This saves them valuable time compared to when they had to source from wholesale markets and ensures that the produce is traceable and safe. Fourth, it meticulously **tracks data** from farmer to vendor, providing them with evidence of the viability of their businesses, which can then be used to apply for loans to expand their activities. Fifth, the company supports farmers in **planning their crop production** to align with market demand. Finally, it has agreed a **minimum fair price** for onion producers, factoring in production and maintenance costs along with a 20% profit for farmers. In 2020, 6,500 tonnes of produce were collected from smallholder farmers despite challenges in ensuring a consistent supply.*

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Entry points for more inclusive urban food chains

In line with the six principles above, several entry points can be identified to make urban food supply chains more inclusive. After 40+ years of experience in sustainable food and agriculture, one of our main lessons is that **competitive farmer organisations** play a critical role in organising efficient collective marketing, optimising logistics and minimising losses, running effective quality assurance mechanisms, negotiating good prices for farmers and offering quality services to their members. Nevertheless, in order for these farmer organisations to grow, they need better access to **affordable finance**. This is often a challenge due to the perception of high risk and low return by capital providers. There is consequently a large gap to fill when it comes to offering financial products that suit the needs of farmer organisations oriented towards domestic urban markets. Finally, **short chain platforms and food hubs**, especially those organised by farmers themselves, can rationalise logistics and paperwork while putting farmers in a price-setting position. In Leuven, Belgium, a group of organisations including the Municipality of Leuven, Circular Flanders, EIT-Food, Rikolto, the financial cooperative CERA, the Innovation Support Centre *(Innovatiesteunpunt)* and Linked.Farm, a cooperative dedicated to supporting short food supply chain initiatives in Belgium, set up the local food distribution system "Kort'om Leuven" to support farmers in achieving a decent income and improve the sustainability of the food consumed in the city. Based on a business-to-business model, it currently serves 13 supermarkets and 19 buyers from the hospitality sector. While achieving a fair price is still a struggle in the face of fierce competition from mainstream channels, the logistics have proven to work, and the cooperative is close to breaking even after less than two years of operation. Kort'om Leuven directly contributes to the city's food strategy: "Leuven Connects" whose vision calls for a wide mix of high-performance distribution channels for products from the region and aspires to professionalise short chain operations while reducing their logistical costs. A recent study conservatively demonstrated a return-on-investment of 1.86 euro for every euro invested in the platform. The ratio goes up to 3.11 when incorporating health benefits.

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Credits: ©Natalia Palomino/Rikolto

The way forward: inclusive business for urban supply chains

Although it is never that easy, applying the six principles of inclusive business is easier in collaboration with institutionalised and relatively large urban buyers such as supermarkets, public kitchens and processing companies. The main challenge lies in bringing these principles to life in more informal settings where farmers, intermediaries and vendors are entangled in a constellation of criss-crossing business relationships often characterised by power and information asymmetries. As mentioned above, creating the incentives for producers and other urban food chain actors to adopt more sustainable practices requires buyers to offer them a better deal: one where they can make a decent living from their work. Although urban markets are increasingly concerned about sustainability, safety and fairness, relying on consumer demand alone is not enough. This is why inclusive business practices must go hand-in-hand with ambitious, well-resourced local food policies and innovative governance mechanisms in which a diverse and representative group of actors work together to develop inclusive business models for supplying cities.

In this light, an ongoing project in Lima (Peru) and Quito (Ecuador), jointly implemented by Ecosad, Funsad, RUAF

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and Rikolto, with the support of Canada's International Development Research Centre, will seek to understand how food hubs, which bring healthy locally produced food to urban citizens through neighbourhood markets, can be established around inclusive business principles and following a rights-based approach.

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More information
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Find out more on Rikolto's website:
Food Smart Cities:
https://www.rikolto.org/en/focus-areas/food-smart-cities
Inclusive business:
https://www.rikolto.org/en/inclusive-business-insights

The way forward. Embracing urban agroecological approaches

The current UPA narrative highlights the key benefits of cities taking UPA seriously: inclusivity and agency, along with regeneration and circularity that result from taking an urban agroecology approach.

The articles, opinions and boxes in this section highlight the continued existence of UPA as an element of urbanisation and its role and potential in the much needed and overdue food systems transformation. Although the narrative, key actors and attention on UPA may have changed from 20 years ago, the key elements in addressing the multifunctionality of UPA, and in seeing it as part of the urban agroecosystem, are quite similar to twenty years ago (see the article by Joe Nasr, p. 49). Cities, given their impact as well as their capacity and influence, have an important role to play in the critical transformation of global food systems.

For urban agriculture to realise its potential as part of food systems transformation, proponents and practitioners must act on the following imperatives:

UPA as strategic opportunity, not just crisis response

Despite changing and often unfavourable conditions, UPA continues to find its place in cities and city region food systems, while adapting and responding to these changing conditions (see the article by Pay Drechsel, p. 65). UPA occupies a significant area of about 67 million hectares globally (Thebo et al., 2014). Furthermore, UPA should be seen as a strategic opportunity, rather than a response to crisis situations. A frequent problem over the past twenty years has been the scarcity of quantitative data that allows comparison between cities. In part this is due to the use of different concepts and system boundaries (UA, PUA, City Region Food Systems), and a persisting "perception of the temporary nature and insignificance of urban farming in particular in low-income countries". Recent attention to UPA through the Sourcebook (see p. 59), and the renewed attention from various UN agencies, banks and cities, may lead to a stronger information base and greater comparability of data between cities and city regions.

True-cost accounting

Reconnecting cities with -agroecological approaches to-UPA complements and diversifies food chains, improves the livelihoods of city dwellers (often as part of the informal economy), supports waste recycling, enhances biodiversity, reduces energy needs and develops a regenerative urban

agricultural system. This requires a holistic view and systemic approach to food system change, one based on proper assessments that include externalities and true cost accounting (vis-à-vis current subsidies on, for instance, chemical fertilisers). Financial cost recovery remains a key issue for the circular economy (see the article by Pay Drechsel, p. 65), and there is a need for entrepreneurs to monetise the economic benefits for society and nature which are now fully internalised by society but usually lack a direct market value. This is noted and supported in the articles in this section, and should inform future action, policy change and investments.

Leveraging and guiding investment in UPA and value chains

Grodon Prain (see the article on p. 53) mentions some key investment opportunities (for instance by global development banks) in data management, capacity building, job creation, the protection and stimulation of agricultural space around and within cities, diversification of local food markets and procurement, innovative technologies, resource recovery from wastes, and ecosystem services that mitigate and adapt to climate change, under an enabling governance. Authorities need to support and guide investment in local food distribution platforms and food hubs, reaching out to consumer movements and citizen/youth-led initiatives that drive food change at the neighbourhood or company level (see the article by Charlotte Flechet and Josephine Ecklu, p. 69). Several of these issues are also dealt with in other sections of this UA magazine.

Regenerative approaches and soil health

Regenerative approaches are needed within UPA that enhance the environment while co-creating other benefits by utilising its multiple functions and values. Healthy urban soils contribute to the delivery of a plethora of ecosystem services. Perhaps cities should develop policies on soil conservation for urban farming and soil quality? (see the article by Dionysios Touliatos and Joy Carey, p. 62).

Nuanced understanding through dialogue and cooperation

Urban Agroecology is a holistic and systemic approach to better understand and design sustainable urban and regional food systems. However, rather than simply promoting the concept of UPA (or just one form of UPA) as a solution, the focus needs to be on more nuanced and improved understandings of many complex issues that

arise. Further work is needed on its added values, as well as support for research to quantify its contributions and to guide its practical implementation, including as part of cities' climate change adaptation, resilience, or ecological emergency responses, supported by public and private stakeholders. This requires inclusive stakeholder dialogues, interaction, and capacities to connect, to work together, and to enable the implementation of city-specific, agreed urban development agendas which support the benefits of UPA and do not dismiss it as a fad or temporary phenomenon.

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Key resources

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Urban and Regional Food Systems Planning

We urgently need urban and regional food systems planners!

Our planet is more than ever urban, and we are in the middle of a massive urban transition, one that will continue in the decades to come, with close to 500 million new urbanites in India and Africa alone. This largely "unplanned urban revolution" continues to eat up arable land at an accelerated pace. Its demand for cheap food is destroying the remaining food base of the planet.

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Future challenges for urban food planners, the next 10 years

Yves Cabannes

Cities and their hinterland need to build their food sovereignty, learning from rural practices and stances, and to increase their self-sufficiency in nutritious food, and its accessibility and affordability, especially for the excluded and the poor. To do so, every piece of cultivable space counts: first the remaining and communal urban agricultural land, plus parks, rights-of-way alongside public transport tracks, facades and roofs, and many other opportunities. These are essential but will not be sufficient to achieve nutritious food sovereignty on the scale required. Land in peri-urban and close-by rural areas is also needed to allow the production and processing of local food, its safe transport and storage, and for regional fairs and markets, either occasional or permanent, as well as for recycling food waste all along the chain. Such spaces rarely exist on the required scale. Climate change and the COVID-19 pandemic highlight the emergency and force us to rethink and build local supply and food distribution channels.

To summarise:
- *an urban food planning revolution is needed and, at the same:*
- *we urgently need urban and regional food system planners.*

The good news is that food planning is gradually being considered in some cities, although not many. Existing knowledge and emerging practices need to be transformed into material that can be used in training all types of actors, from local city planners to national associations of planners, food activists, scholars, grassroot organisations, in fact everyone concerned about food. As incredible as it seems, no food planning graduate programmes exist. The following articles and boxes point the way ahead and illustrate some of the solid first steps already taken by multiple actors in cities and, first and foremost, by strong communities and urban farmers.

Urban food security and food systems are receiving growing attention at the international level and in a growing number of cities of all sizes. However, the issue of food and urban planning is insufficiently covered in the existing literature, in training programmes or in localised practices. How food is produced, processed, distributed, consumed, recovered and wasted, and how local food systems complement rural agricultural production, are issues that relate closely to urban and regional planning.

Food and planning remain largely strangers, albeit with some rare exceptions

Some cities and regions have made huge progress in integrating food systems and urban agriculture into planning, zoning and land uses over recent years (Cabannes & Marocchino, 2019). However, their practices have not been made visible to a wide audience, and to city and regional planners in particular. In addition, reflections on their limitations and successes deserve greater attention.

Urban planning literature and practice still largely ignore food issues, although they have received some attention since the turn of the twentieth century from planners and architects linked to the Garden City movement. In general, if we exclude the Garden City movement, (see the article 'Letchworth, garden city: the strength of community land regime', p. 82; Cabannes & Ross, 2018) food remained 'a stranger to the field of urban planning' (Pothukuchi & Kaufman, 2000) until the early 2000s, when the first studies to understand why food was not part of urban planning started in the US. The prevailing sectoral planning and decision-making approach, and its lack of a holistic perspective, seems one of the reasons why 'food has been a stranger' to urban planning. Where cities and regions, and these are primarily in the Global North, have made progress in building bridges between food and planning this is, in most cases, limited to particular subsectors of the food system, such as urban agriculture, which provide an easy entry point.

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Key challenges

We know reasonably well what are the key urban challenges when speaking of food. The book "integrating food into urban planning" (Cabannes & Marocchino, 2019) highlights six of them:

[a] Food insecurity, undernutrition and overnutrition is increasingly urban, and the notion of food security, as part of fulfilling the right to food, is challenged by the notion of **food sovereignty,** an idea that largely originated from rural-based movements and food producers at the World Food Summit in 1996. Food Sovereignty is conceived to be: the right of peoples to define their own food and agriculture; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives; to determine the extent to which they want to be self-reliant; to restrict the dumping of products in their markets; and to provide local fisheries-based communities the priority in managing the use of and the rights to aquatic resources[1].

[b] Understanding 'urban'. Stating that our world is becoming predominantly urban, even if this is true, begs the question of what is actually meant by 'urban'. Definitions of 'cities' and 'urban' vary greatly from one country to another, which makes generalisation quite difficult. However, an important aspect to be considered by food planners is in which categories of urban areas the growth is taking place. The fact that an increasing share of the world's population live in or gravitate around medium-sized and small cities means that these are likely to play an important role in food demand. The article by Haysom and Battersby (see the article on p. 83) focuses on the crucial role that secondary cities will play, for instance in Africa which is facing the largest urban revolution in its history, with probably over 200 million new urban people to be fed (see box 'Integrating food into planning of Intermediary Cities', p. 88).

[c] Urban poverty in an increasingly inequitable world and its impact on urban affordability and accessibility. Recent and extremely detailed research undertaken by the poor themselves (Boonyabancha & Kerr, 2015) points to important elements of food planning. To better integrate food into urban planning, the research provides the share of monthly monetary expenses that urban poor and very poor people spend on food and drinking water. The good news is that food is the main economic engine for locally based economic development as it drains about 50% of poor people's income. The bad news though is that, so far, no appropriate dignified city spaces, either land or retail places, are planned for food-related activities along the food chain, for production and urban agriculture, for food transformation, proper storage, markets and fairs of all kinds, or decentralised food waste transformation.

[d] Informal food sector and food street trading. Informal food systems embrace a variety of activities (see the article by Bill Vorley, p. 32). Globally, in most countries, the informal food sector remains the key provider of accessible food and not only for the poor (see the article by John Taylor on Dhaka, p. 80). However, urban and regional planners have not been able to properly integrate informality in planning in order to support it, allow it to improve, increase the income and protection of its workers, and women in particular, and at the same time address some of its structural difficulties.

[e] The challenge of climate and environmental changes. The multiple effects of climate change, including the growing number of shocks and extreme weather events such as floods, droughts and storms, impact on urban areas and primarily affect the urban poor, the places they live and their physical and economic access to food. The COP 26 meeting, and the social movements that participated, clearly highlighted the multiple and dramatic impacts on soil quality, water shortages, soil salinity etc. Again here, planners need to contribute to more resilient cities (see the section on Resilience, p. 11).

[f] Access to secure urban and peri-urban land for food-related activities. Not only are expanding cities consuming their arable land and drinking their scarce water resources, the data on the grabbing of arable and pastoral land are alarming (Rulli et al., 2013) with entire rural and peri-urban territories being converted to industrial farming for food goods for export. This is probably the most difficult challenge that cities have to address, and one in which urban planners have a role to play.

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[1] https://viacampesina.org/en/

Yves Cabannes
René van Veenhuizen

Integrating food systems into local planning

Although food is beginning to be integrated into planning in various cities and regions, local practices have yet to be made visible to a wider audience and, just as importantly, reflections on their limits and successes remain scarce. One intention of the course is to make these practices more visible, reflect upon them and connect them to existing demands and challenges in feeding cities. The present course, in filling an existing gap, connects to past and current training programmes. It is fuelled by a wide range of contributions by urban food practitioners, scholars and researchers specialising in topics related to food system planning. Many of the training courses offered in Africa, Asia and Latin America tend to be linked to internationally supported programmes and, more often than not, do not survive when the associated programmes come to an end. This is particularly the case when it comes to food systems planning.

The course is provided in two formats. The main format is an eighty hour course, stretching over two months. Being practitioner- and project-centred, it includes ample preparation, a five day (forty- hour) intensive course, with half the time given over to studio sessions and work groups, and coaching afterwards focusing on a city to formulate planning-related projects and programmes. The second format is more compact, involving two weeks of virtual training.

The course focuses on the planning approach to food systems in urban and city region contexts. The course aims to help participants to:

- Gain a critical understanding of the interrelations between planning and food systems and of some of the key concepts and approaches to urban and regional food system planning.
- Gain propositional capacity and skills related to urban/City Region food planning.
- Facilitate the formulation and implementation of food planning and related policies at the municipal level through a participatory and multi-stakeholder approach.
- Contribute to the implementation of the New Urban Agenda and to the Urban Food Agenda, primarily in relation to food security and improved nutrition.

The course consists of:

- Ten interactive online lectures, including debates and exchanges in plenary and working groups.
- Compulsory readings related to the ten interactive lectures.
- Presentation and analysis of real-life case studies.
- Learning-by-doing coursework consisting of preparing an assessment and proposals for food system planning in the hosting city.

The course pays particular attention to the role of actors in cities and to cities themselves in contributing to more sustainable and resilient food systems. On the one hand, it highlights how planning documents, zoning rules and standards can form obstacles to strengthening the food system, such as by simply complicating the authorisation of local food production or the raising of animals. Conversely, on the other hand, the examination of cases shows the multiple contributions that food system planning can make and could play in the future in addressing the food challenges faced by different cities. The central premise is that a "food lens", with food system planning in the first place, can be a driver in envisioning cities of the future that are more capable of resisting climate change and pandemics shocks, and work much better.

This course was developed by RUAF (Yves Cabannes and René van Veenhuizen) for FAO in response to the need for regular executive-level adult education courses tailored to the needs of the multiple actors, from various disciplines, that are involved in urban food planning, policy development or other programmes.

Credits: ©Samantha Reinders

Mapping and assessing fresh-food markets in the Dhaka metropolitan area

John Taylor

In the 1970s and 1980s, when many of its public fresh markets were constructed, the population of Dhaka was between 1 and 3.2 million. The population grew rapidly to over 20 million by 2020 due to urban migration spurred by Bangladesh's burgeoning economic growth. However, despite the surging growth of the city, little attention was given to building new markets in expanding neighbourhoods, or upgrading those of older neighbourhoods, to keep up with the dynamics of the city. As a result, markets have become overburdened by high levels of demand, with services and physical conditions deteriorating, space becoming more cramped, and market management often unable to contend with the expectations of consumers for improved hygiene and food safety. In addition, due to the high density and the high value of urban land, it is difficult to find sizeable plots for building new large markets and, consequently, older communities are likely to have better access to fresh-food markets than the newly developed residential areas. These are some of the critical planning issues that have to be considered in trying to ensure the supply of fresh, affordable and safe food to a metropolitan area, not only in Dhaka but in any country.

Credits: ©FAO/Fahad Kaizer

Fresh-food markets are the most popular places for consumers to buy groceries in the Dhaka Metropolitan Area (DMA). Known as 'Katcha Bazar', these markets are some of the busiest and most vibrant places in the whole of this crowded and populous city, offering residents and businesses a wide variety of food such as milk, poultry, vegetables, fruits, beef and fish, and even dry goods such as rice and grains. Such markets play a key role in the supply of affordable food, making them a critical part of the supply chain and the overall food system, with around 85 percent of Dhaka's inhabitants buying food from these markets. Given the wide variety of fresh produce available, and at affordable prices, these markets are the go-to choice for all socioeconomic groups, and often the only affordable source of food for the poor.

Fresh-food markets can be categorised into four broad types – city level, medium sized, neighbourhood level and temporary markets – based on their geographic location, size and structure type. However, little data about their location, their accessibility, age, conditions, ownership, operating mechanisms, governance and planning have been collected and made available. Due to this lack of information, markets have not received the attention they deserve. Without accurate information, such as maps and a comprehensive database, the national and local governments, development agencies and the private sector are unable to understand the needs of markets, and then respond to these needs with effective initiatives and policies.

In 2020, FAO's Dhaka Food System (DFS) project launched a city-wide assessment of Dhaka's fresh-food markets. The assessment covered all 386 markets that serve the metropolitan area's four city corporations: Dhaka North, Dhaka South, Gazipur and Narayanganj City Corporation. Mapping was conducted using a Global Positioning System (GPS) device to locate each market accurately in a geo-referenced database (using Geographic Information Systems (GIS)). As the assessment was to include private as well as public markets, the existence and location of many markets was identified by asking local residents since city corporations were not always aware of them. Data were also collected on a range of topics, including basic services available (water supply, electricity, sanitation, ventilation and lighting), market management arrangements and food safety practices using a digital survey administered by the data collection team. These data provide a much-needed insight into the markets and the challenges they face.

Credits: ©FAO/Fahad Kaizer

Main findings that are relevant for planning

1. Unequal access to fresh markets

A comparison between the population densities and the density of the markets shows that the clustering of markets does not depend on the population densities. There are many high-density areas in Dhaka that do not fall within a fifteen-minute walk of a market. In other words, these areas are under-served by fresh-food markets. In these under-served communities, many, especially the poor, are left with the only option of buying food from mobile vendors. This significantly reduces their access to fresh, diverse and affordable food. In the long run, this lack of access can affect the health and nutrition of the poor.

2. Lack of good practices jeopardise food safety

Food safety is a major concern for consumers all over the country. Although markets generally have separate spaces allocated for each food group, vendors often ignore this and it is not uncommon to find a vegetable seller between fish and meat vendors, and vice versa. Indeed, more than one-third of the markets do not maintain a separation of food categories inside the market. This puts food safety at risk and significantly increases the likelihood of cross-contamination.

Another frequently observed risky practice is of meat vendors slaughtering birds or animals in front of their own stalls. Only 6 percent of the markets have a slaughterhouse or a designated space for slaughtering. The number of slaughterhouses in the city is simply not adequate to meet the demand of all the fresh-food markets. In addition, vendors are reluctant to use slaughterhouses as they are often poorly functioning or too far from the markets. This practice of slaughtering in the open is not only harmful for the environment but also increases the likelihood of cross-contamination and can compromise meat quality.

3. Inadequate basic services hamper operations

Fresh-food markets need a set of basic services to be available in order to be able to operate satisfactorily. The assessment collected data on the availability of the five most important basic services: water supply, electricity, sanitation, ventilation and lighting. Apart from sanitation, all these basic services are available in more than 80 percent of the markets although this is not to say that these services are necessarily of a satisfactory standard. The adequacy of a safe water supply, disputes between vendors and market committees over payment of electricity bills, lack of natural light and poor airflows inside the markets are all issues of concern. Having services available means little unless they are well maintained and equally available to all vendors and customers.

More than 40 percent of the markets do not have toilets. This is alarming as toilet and handwashing facilities are necessary for the personal hygiene of vendors and customers. In addition, only 7 percent of markets have gender-segregated toilets, which can significantly reduce the opportunity for women to shop.

Conclusions

Dhaka's population is projected to rise to 27 million by 2040, continuing to add pressure to the existing market infrastructure, and posing significant challenges to ensuring the supply of and access to safe, nutritious and healthy food for its citizens. This population trend makes the need for functional, hygienic and sufficient fresh-food markets more acute. In addressing food system issues, the spatial analysis of market locations, to enable the identification of areas of the city with low levels of access to fresh food, and informed planning and construction of new or upgraded markets, as well as the use of a market database to regularly monitor market performance, are important tools.

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Letchworth, garden city: the strength of community land regime

Yves Cabannes
René van Veenhuizen

Letchworth, the world's first Garden City sits about 50 kilometres north of London. Its design was meant to bring the best of town and country together as defined in Ebenezer Howard's visionary 1898 book Garden Cities of Tomorrow. Today, geographically, demographically and physically, Letchworth leans in part towards London and the metropolis and in part towards the more rural region of the East of England. Remarkably, 120 years after its foundation, half of the city is still under cultivation in probably one of the hottest land markets in the world.

The analysis of Letchworth and the Garden City movement suggests that four drivers have underpinned the successful integration of food into its urban planning:

• A collective and communal land property regime. Apart from housing that was largely privatised under the Thatcher government (1970s), most of the city is under collective ownership, and the users have the right of use for which they pay a monthly lease.
• Strong organisations, such as the Heritage Foundation, that own, manage, develop and redistribute the benefits of the land.
• Grassroots organisations able to keep the city region food chain spirit alive over time.
• A business sector committed to a locally based sustainable food system.

The combination of these elements has generated creative partnerships that have constantly renewed and shaped food-related spaces, transforming some land uses and contributing positively to the City Region Food system. The Garden City, as a Social City concept, and the planning experience of Letchworth illustrate the very notion of City Region Food Systems in that they are an evolutionary combination of:
• Multi-scalar and multiple food-related spaces [from backyards to green belt and rural land between garden cities]. These spaces are the physical base of the Food System, and it is essential that they are considered by urban and regional planners.
• Multiple symbiotic food-related actors. The creation of positive partnerships working synergistically and the key role played by the LGC Heritage Foundation, as the steward and owner of most of the land. In addition, food plays a fully inclusive role, linking different age groups and social groups, youth and women during

the war through multiple actions and multiple spaces in the city.
• Multisectoral dimensions. Various sectors in the city, such as waste management and environment protection, economic policies and job generation have been related in one way or another to food. This multisectoral dimension is also related to the fact that, through history, food-related activities have taken place throughout the entire food chain - from the "apple tree to the pub" and from the "land to the table".

Despite the Garden City movement having been born in the second half of the 19th century, when slums were rapidly expanding in cities, urban and regional planners can still learn lessons from Letchworth and the Garden City movement. In evolving planning principles for city region food systems and innovative solutions for increasing self-sufficiency in cities, one can learn from the nuanced adaptation of planning to topography and level contours, natural water channels and the potential of the environment. The role for planners should not only be to "design and formulate", but to empower residents and community-based organisations and to give people the tools, including the land, to create their own solutions. What this means is that today's planners need to think about the long-term provision of green spaces, both food and non-food, as community assets, provide strong governance to ensure these survive, and to recognise that food-related income, including land rental income from the common goods, can contribute to the long-term economic sustainability of the settlement. Food-related efforts can also contribute to the social, ecological and economic sustainability of the place. Letchworth's sustainability over time remains a beacon for planners, after years of destructive modernist planning elsewhere.

More information
• Summary based on: Cabannes, Y. & Ross, P. (2018). Food Planning in Garden Cities: The Letchworth Legacy, Pioneering urban agriculture and food integration into urban planning and design. RUAF Occasional Paper. Leusden.

Applying secondary city typologies as a means to engage urban food governance and planning in African cities

Gareth Haysom
Jane Battersby

Sub-Saharan Africa is urbanising rapidly. Although the rapid population growth in large primary cities of the continent (Lagos, Nairobi, Dar-es-Salaam and others) has received most research and policy attention, the reality is that the bulk of the Africa's urbanisation is taking place, and will continue to take place, in secondary and tertiary cities.

In 2015, the number of urban Africans residing in cities of one million or fewer inhabitants totalled 320 million, while only 175 million resided in primary cities (over one million inhabitants) (UN DESA, 2018) (see Figure 1). The United Nations Population Division estimates that by 2035 there will be an estimated 549 million urban Africans living in cities with fewer than one million inhabitants.

As a result of this bias in attention towards primary cities, and the role of these cities as loci of political and economic power, most urban policy and programming is designed with primary cities in mind. These policies and programmes are then applied to secondary and tertiary cities. However,

these cities often have very different economic, infrastructural, social and political contexts to the primary cities. In the case of urban food systems, primary and secondary cities may be in different stages of food system and nutrition transitions, and they may also have different capacities and resources to respond to food system challenges.

This article argues that there is a fundamental need to pay more careful governance and planning attention to secondary and tertiary cities, and their particular needs and opportunities. A focus on secondary cities is emerging through global urban support organisations such as UN-Habitat, UCLG[1] and Cities Alliance[2]. Despite this growing interest, most attention has been focused on democratic devolution and their increasing prominence, with little attention given to the food systems of these cities. An important starting point is understanding the diversity of types of secondary and tertiary cities in Africa, as this diversity will fundamentally shape the viability of interventions.
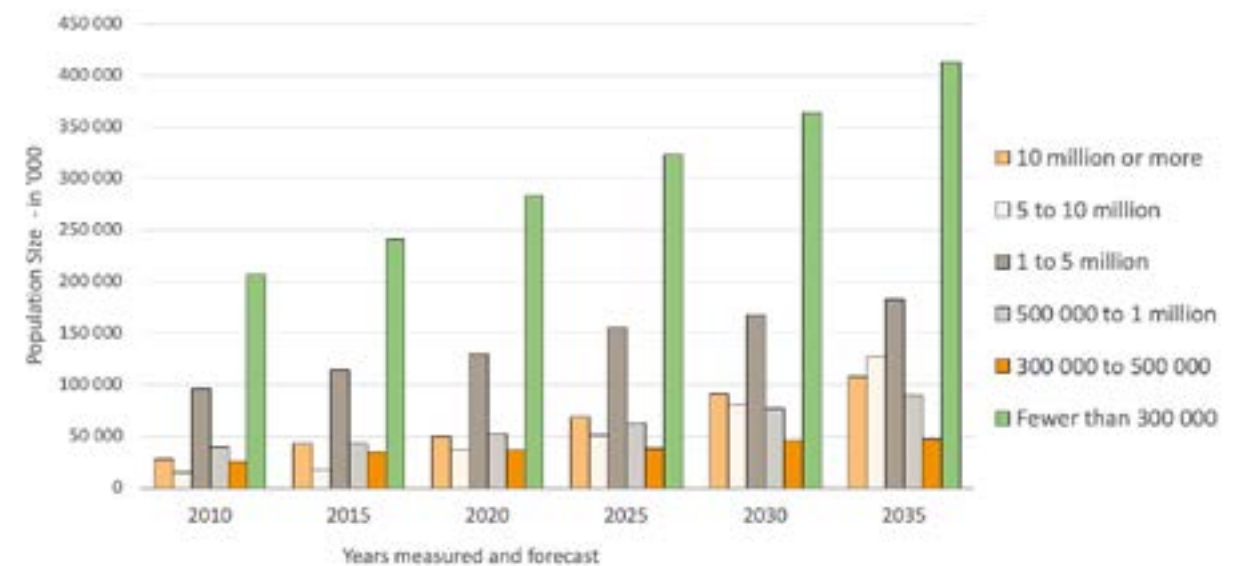

Figure 1: Africa's urban profiles by city population size (Source: United Nations, 2018)

[1] https://www.uclg.org/en/agenda/intermediary-cities
[2] https://www.citiesalliance.org/themes/secondary-cities

The absence of nuance and contextual specificity means that governance, planning and wider developmental responses overlook key local trends, needs and trajectories. From a planning and development perspective, such lack of oversight means that development plans run the risk of effectively casting current misconceptions, and flawed policy understandings about future needs, in concrete. Developments in African cities today will impact the food systems, supply chains, infrastructure profiles and governance of cities and the wider African continent for the next 50 to 100 years (Pieterse et al., 2015). This has ramifications for urban food system planning in African cities.

Organisations that are showing emerging interest in secondary and tertiary cities offer varying definitions and generally use size as a key means of differentiating between primary, secondary and tertiary cities. In this article, we deliberately avoid specific definitions, focusing rather on the typology of a city as a means of better understanding the city's food and governance needs.

Until recently, secondary cities have been framed as rural hubs or extensions of a rural agrarian economy. Drawing largely on demographic data, the World Bank's James Tefft and Marketa Jonasova present a useful starting point in a provisional typology of cities in relation to their food systems (Tefft & Jonasova, 2020). They suggest three categories: **Agricultural towns or cities** - "smaller but fast-growing populations and are in agricultural production areas with a key role in the rural economy"; **Medium and large secondary cities** - "challenged to modernise food system architecture and strengthen food businesses to cater to the needs of diverse consumers"; and **Global megacities** - "served by vibrant modern, traditional and informal food systems that are challenged to operate in congested environments, many in need of upgrading."

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Within this framework, the secondary and tertiary cities have more direct local links, in particular to food production. Such views perpetuate rural framings of most secondary cities, implicitly casting them all in the role of agricultural market centres, or as "agro-cities" (agricultural towns and cities with fewer than one million people) (Tefft et al., 2017). While such framings may have some relevance and may reflect the urban/food dynamics of certain cities, such generalisations are problematic and miss the nature of much of Africa's urban transition.

Our work on secondary towns and cities draws on earlier work by Lily Song (2013) and Brian Roberts (2014) and identifies five specific forms of secondary town or city, where the typological classification takes precedence over size-related classifications. Emerging secondary city typologies are detailed in Table 1 on page 85.

Each city type reflects very different food system, governance and planning needs. The more traditional size-based classifications of secondary and tertiary cities may fall within these categories but often miss the nuances detailed above with their focus on size not function.

Although very few cities will align perfectly with any particular typology, the typologies are indicative of key opportunities and challenges facing different cities. Typological classification offers a tool to bring differences and contextual variations to the fore in urban food system planning (see resource pack in this volume). Secondary cities offer ideal places for planning and design initiatives

Table 1: Secondary City Typologies with examples

Typological differentiation	Examples	Typological characteristics and peculiarities	Examples of food system specificities
Resource and subnational administrative cities	Kitwe, Zambia; Mbour, Senegal	Subnational urban centres of administration, manufacturing, agriculture or resource development, and resource extractive areas.	With large portions of the economy being linked to single resources, with fluctuations in international resource prices, this creates significant boom and bust cycles driving unequal development resulting in extreme stress and vulnerability. This is seen directly through food where even administrative classes fall from relative wealth to extreme poverty and hunger.
Satellite towns or cities	Epworth, Zimbabwe; Marokolong, South Africa	Metropolitan clustered secondary cities that develop on the periphery of major metropolitan or urban regions and take the form of spillover growth centres or labour pool settlements.	The primary city remains the prime food access point, so food retail in the satellite city is largely informal and unplanned, with governance a challenge. Infrastructure is often poor, directly impacting food systems at the household scale and food retail. Significant lack of investment in food environments.
Corridor or trunk cities	Kisumu, Kenya; Tamale, Ghana	Cities along major transportation or trade corridors, often sites where different modes of transport intersect such as ports or border crossings.	Transport enables flows where local foods attract higher prices in primary cities enabling greater income for vendors, but significantly higher local food prices. This infrastructure also enables imports to supplement local foods, enabling affordable protein intake.
Lung or elastic cities	Zion City Moria, South Africa; Hermanus, South Africa	Cities and towns whose permanent residential population is small but has a larger built environment and infrastructure due to seasonal fluctuations due to cultural events, harvest cycles, being resort towns etc. As such, infrastructural and economic needs far exceed the needs of the general permanent population.	Large and redundant infrastructure networks that require maintenance for heavy use in limited periods, diverting key fiscal allocations away from pro-poor needs. Food system relies on short spike period and needs to cover all annual costs over this period, negating investment, R&D, etc.
Urban centres	Towns on the West African Sahelian cattle route or the Namibia/Angola border areas	Smaller towns where the food system, natural environment and society come together. Often reflect hybrid forms of governance with mixed traditional and elected leadership.	Governance is complicated. Traditional systems are generally robust but undermined through growth and development, risk of zoonosis increases. Seasonal aspects are extreme. Intersections between nature/livestock/society under increased strain due to climate variability and development stressors.

for innovative food systems. Context is a central factor in effective decentralised governance and food system planning.

Until recently, African development has largely ignored almost all aspects of a wider urban agenda, focusing instead on issues such as the peasantry, agriculture and natural resource use (Pieterse et al., 2015). However, this has changed: the multitude of multilateral agreements ratified in the past decade, including the SDGs, Habitat3, COPs and Sendai, mean that policy approaches and positions will dictate the new global urban agenda in Africa. Secondary cities are central to this "turn" but will require deliberate attention. However, such deliberate foci

are often interpreted as privileging primary city needs and requirements. Secondary cities are not supplanting primary cities, or even the national scale, but do require specific attention.

The development of a typological classification of cities is premised on the need for better understanding the contextual specificities. More important, from a governance and planning point of view, is understanding how secondary cities interact and engage with other secondary cities, how these cities engage the primary city and national processes. Typological rather than size-based hierarchical perspectives offer unique opportunities in this regard. Cities have always led development innovation.

Secondary city typologies can help identify deliberate and focused sites for food system planning and governance innovation. So, what does this mean for urban food system governance and planning?

1. An appreciation of typologies allows development agencies and NGOs to see the need for more context-driven interventions.
2. This allows cities to situate food system governance and planning within broader political, spatial, economic, social and environmental contexts and trajectories.
3. Integrating planners in multistakeholder food systems work (a case in point is Kisumu where we see a lot of food systems work and actors, but no link to urban planning).

To this end, the starting planning points include:

a) A food system assessment (need not be data intensive – can be a qualitative assessment identifying key nodes in the food system and how they connect to other urban forms and functions).
b) Reconsidering municipal mandates (the city of Cape Town has recently carried out an internal audit of where food intersects with the work of each and every department and sub-department in the city, and found a complex, rich web of overlapping mandates and potential opportunities).
c) Stakeholder mapping.
d) Identification of key sites for intervention and work transversally, across departments and mandates, and include stakeholders (while being aware of the politics).

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Resources

Incorporating Food into Urban Planning: A Toolkit for Planning Educators in Africa & podcasts for planning scholars and practitioners

1. The focus of this toolkit is on why it is critical for planners in Africa to think about food issues and, more specifically, how to equip them to do this as a planning educator. This toolkit was designed to help planners develop theoretical and practical knowledge about food-sensitive planning, with the specific aim of supporting teaching around these issues in a context-sensitive way in Africa.

The toolkit includes:
1. An introduction to the toolkit
2. An introduction to why it is important for planners in Africa to think about food
3. Suggested course outline
4. Case studies

Toolkit link here:
https://consumingurbanpoverty.files.wordpress.com/2019/04/incorporating-food-into-urban-planning-toolkit.pdf

2. Podcasts for planning scholars and practitioners. A parallel resource of six short podcasts for planning scholars and practitioners is available.

Podcasts available here:
https://consumingurbanpoverty.wordpress.com/podcast-series/
This series provides links to resources and discussion questions.

Applied resources on urban food planning:

Planning for Food Secure African Cities Podcast.
https://www.africancentreforcities.net/programme/planning-for-food-secure-african-cities-podcast/
Incorporating Food Into Urban Planning: A Toolkit for Planning Educators in Africa.
https://consumingurbanpoverty.files.wordpress.com/2019/04/incorporating-food-into-urban-planning-toolkit.pdf

Research on food systems governance in secondary cities:
Tomatoes and Taxi Ranks – Reflections of Secondary City Food Systems.
https://www.africancentreforcities.net/wp-content/uploads/2018/10/tomatoes-taxiranks_lowres.pdf
Urban Food Systems Governance and Poverty in African Cities.
https://www.taylorfrancis.com/books/oa-edit/10.4324/9781315191195/urban-food-systems-governance-poverty-african-cities-jane-battersby-vanessa-watson

Other work on secondary cities:
Managing Systems of Secondary Cities – David Roberts.
https://www.citiesalliance.org/sites/default/files/1d%20%28i%29%20-%20Managing%20Systems%20of%20Secondary%20Cities%20Book_low_res.pdf
Cities Alliance – Secondary Cities Resource Guide.
https://www.citiesalliance.org/themes/secondary-cities

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Integrating food into planning of Intermediary Cities Challenges and opportunities

Yves Cabannes

In 2016, The Global Report on Local Democracy, published by UCLG (United Cities and Local Government) highlighted the importance of Intermediary cities, as they *"will host more than 400 million new urban dwellers in the coming 15 years, more than 90% of them in Asia and Sub-Saharan Africa, at a rate of 70,000 people per day"*.

Since then, intermediary cities (I-Cities) have risen to the top of city-programme agendas. This is because of the huge potential they offer, including in terms of food security, and the role they play in the national system of cities. In part also because of the enormous threats they are facing. It is not surprising that one of the most active world forum commissions at UCLG is precisely

on I-Cities, and that the 9th Africities summit, which will be held 17-21 May 2022, is being held in Kisumu, a typical I-City in Kenya, with **African I-Cities and the African Union's Agenda 2063** as its central topic.

UCLG and its academic partners use a definition of I-Cities *"based on **population** (generally fewer than one million inhabitants, but with enormous variations among countries and regions), and the **functions** that they perform: their role in the mediation of flows (of goods, information, innovations, and administration, etc.) and between the rural and the urban territories within their respective areas of influence and with respect to other cities or regions"*.
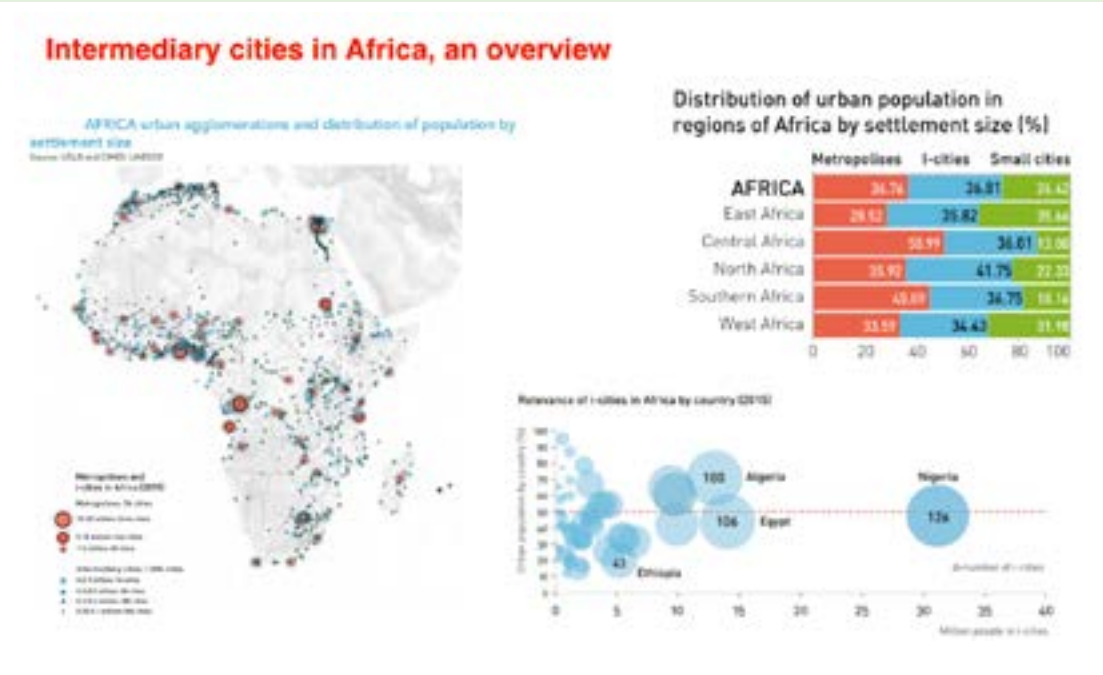
Figure 1: Intermediary cities in Africa, an overview. Source: https://www.uclg.org/sites/default/files/uclg_frame_document_ic.pdf

An international consultation on the SWOT of I-Cities[1], identified the loss of farmland, degradation of natural services and an urban sprawl without environmental structural elements as being among the main threats. At the same time "land prices and cost of services" were more accessible (and cheaper) therefore offering better alternatives for shaping a food future with participatory planning. However, food-related issues are still largely ignored in planning. A major element of the declaration resulting from the first UCLG World Forum on I-Cities held in Chefchaouen, Morocco (2018) was an appeal for *"evolutive planning and green land-use planning, putting in place specific rules to control the balance between urban and rural, and to help local municipalities guarantee quality of life in their territories [Article 7]"*.

In a nutshell, I-Cities cannot be ignored when talking about food security for at least two reasons: first most I-Cities are rich in traditional food-related **knowledge and culture** that are usually embedded in localised farming, fishing and animal-raising practices that are disappearing; second, there is relatively more **land** available, offering possibilities for a more-intensive agriculture, farming, animal raising, agro-processing and markets, for both local consumption and export. As such, they provide a unique opportunity, but food needs to be integrated into participatory planning and land zoning, tailored to their needs and their specificities.

Lleida University, which has long held the UNESCO chair on I-Cities and constitutes a prime source of information, has proposed a typology for I-Cities (UCLG Frame document, see under further reading) one that differs from the one proposed for Secondary Cities by ACC (see the article by Gareth Haysom and Jane Battersby, p. 83). It identifies historical regional nodes; I-City clusters (Metropolitan clusters; Regional clusters, Cross border clusters); and I-City corridors (differentiating national corridors, international corridors and international networks). This typology echoes and enriches the **City-Region** concept, developed and used by RUAF and its partners, and raises a planning challenge to the "one size fits all solutions".

Recent research carried out for RUAF and FAO on urban planning (see the article on p. 79) concluded the following in relation to I-Cities in Africa and the challenges they pose when it comes to planning and food planning:

[a] In many cases, there are no planning documents, norms and regulations.
[b] Limited "planning culture" and culture of respect for planning.
[c] Very few trained planners, and therefore even fewer food planners, with a participatory perspective.
[d] The explosive growth of informal settlements can be destructive to existing farming practices.
[e] Generally, the lack of legally recognised land regimes, with only partial land registration and cadastres, limits investments in both formal and informal sectors.
[f] There is only limited recognition of the huge potential and the limits of the informal sector, especially in serving markets of all sizes and kinds.

Planning city food systems will remain a challenge for the years to come if we want to significantly increase food sovereignty in Africa and beyond.

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[1] For more on this, see https://issuu.com/uclgcglu/docs/consultation_intermediary_cities

Urban agriculture planning in transition, the case of Beijing

Dr. Jianming Cai
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In China, as elsewhere, planning is constantly developing in order to adapt to new situations. Particularly in the last two decades, a planning transition has been apparent as China changed from a quantitative approach, focusing on economic growth and urban expansion, to a more qualitative approach, seeking sustainable development and liveable communities. Beijing has played a pioneering role, along with other cities such as Shanghai, in leading this urban planning transition.

"Within any given setting, planning must continuously reinvent itself as circumstances change. In contemporary societies, politics, institutions, economies, technologies and social values are all subject to continuous, often radical, change, so planners often feel beleaguered, their profession perpetually on the brink of an existential crisis" (Friedmann, 2005, p. 29).

Urban planning in China

There are three main elements in China's urban planning system: urban master planning; urban land use planning; and urban environmental planning. They look respectively at comprehensive and integrated urban development; at urban and rural land use and development, and at protecting farmland in the peri-urban region; and at protecting the environment from urban expansion. In addition, China's more traditional five-year planning focuses on economic development (and the required changes to land use in a specific period). Subject to these, there are many different plans for specific themes, sectors and projects. Urban agriculture (UA) planning is one of these: planning and programming the agriculture industry and developments in the peri-urban region of a city.

As the capital city and one of the first cities in China to introduce UA to urban development, Beijing is a pacesetter in UA planning practice in China, and representative of the UA evolution in the country.

Beijing

Like most cities in China, Beijing covers a large administrative territory, currently covering 16,410 sq. km of land. This area has grown since 1958, and the initial purpose of the enlargement was to maximise self-contained food supply and to secure its local water sources (i.e. the Miyun reservoir). From 1949 to the early 1980s, agriculture planning in Beijing aimed to protect farmland and assure local food supply, particularly of vegetables. In practice, this was achieved throughout the period, although the food supply was low in terms of variety and quality. Given the poor infrastructure, the dual land-use system (suburban/rural purely responsible for agriculture, and nearly all industry and services located in the city) seems a reasonable choice: urban and rural Beijing were planned to be separate.

Planning phases

The in-situ urbanisation induced by the establishment of small-scale town and township enterprises in the peri-urban region since the 1980s, and the relocation of manufacturing from the downtown area to the inner peri-urban region in the 1990s, initiated interaction between the urban and the rural areas of Beijing. Accordingly, the peri-urban land use pattern changed: farmland around the towns and larger villages fragmented and young labourers left farming for jobs in manufacturing. More than 100,000 migrant farmers from other provinces were attracted to peri-urban Beijing to undertake the farming work. However, due to conflicting interests between landowners and the migrant farmers, little was invested in agriculture, affecting production and the peri-urban landscape and challenging food supply and the environment.

The SARS outbreak in 2003 in Beijing made the city recognise the importance of a local food supply and the role of urban farming in the city's resilience. Accordingly, a new strategy, that included UA, was introduced and promoted in the peri-urban region, in part thanks to awareness-raising by RUAF projects in the city. In 2006, the Beijing Agriculture and Rural Commission officially issued a by-law to encourage the peri-urban region to adopt multifunctional UA in their rural development. This included both improving local food supply and multifunctional UA: meeting the needs of urban residents for tourism, leisure and other outdoor activities. As a result, more than 1,000 multifunctional agro-parks, cooperatives and agro-processing companies were re-established and restructured[1].

Map 1: Urban Agriculture Zoning in Beijing.
Source: by authors based on Beijing UA plan (2006-2010)

To spatially regulate the UA development in Beijing, a zoning strategy formed part of the city's 11th five-year plan (2006-2010). This included five zones, each with a specific agricultural theme: Zone 1 the urban centre, includes some gardening; Zone 2, the inner suburban area, with niche and high quality agriculture, such as vegetables and flowers, and some agro-tourism; Zone 3, the peri-urban plain area, with large scale farming and agro-processing (pork and milk); Zone 4, the peri-urban mountain area, with a more ecological function and fruit production; and Zone 5, the more rural Beijing that covers other provinces, strengthening cooperation with these regions to enhance food supply to the city. Through support from preferential policies and improved infrastructure, this UA pattern gradually emerged and stabilised.

The 2008 Summer Olympics made Beijing rethink its UA strategy. As a city with water shortages (average annual rainfall: 600 mm), Beijing could no longer sustain its traditional farming. New water-saving technologies were introduced including drip irrigation, rainwater harvesting and changes in the crops grown. Later, after improving the water supply to Beijing, rice production was re-introduced to boost tourism and emphasise the ecological value of paddy field wetlands.

To further improve the UA development in Beijing, the city government launched an action plan, dubbed the "221 action plan", during the 12th five-year plan period (2011-2015). 2-2-1 refers to: 2 - the combination of both agriculture and food and local supply and demand; 2 - support by both science & technology and financing; and 1 for the Beijing UA platform to manage and monitor sustainable UA development in the city. More than ten years of operation of the platform shows it to be a useful and effective tool in decision making, and in responding to unexpected changes including in consumption behaviour.

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With China's quality urbanisation approach in the background (since 2014), Beijing has changed since 2016 from seeking quantitative expansion in population, the economy and land use, to more quality development aiming for greater efficiency, productivity and more compact utilisation of space. In doing so, Beijing has focused on four functions: centres of culture; international exchange; science & technology innovation; and politics. The most recent city master plan (2016-2035) hence gives more attention to the spatial division and integration of the urban and peri-urban regions, as well as to regional cooperation between Beijing and its surrounding cities. The main aims of this change are climate change mitigation and adaptation; linking urban and rural areas; and to improve the environment. This has included the relocation of some functions and activities from the urban centre to newly designated peri-urban areas, the establishment of a set of wedge-shaped green corridors, and the enhancement of UA's ecological function.

Guided by the master plan, the 13th five-year UA plan (2016-2020) in Beijing also emphasised the exploration of the ecological function of peri-urban agriculture. A remarkable initiative was to encourage farmers to reduce the production of some traditional crops, and instead plant trees to develop Beijing as a forestry city (a Chinese standard requiring the city's overall forest coverage to reach 44%). Another notable action was to dismantle many greenhouses (especially those along major roads) to restore the original landscape. Arguably this could risk local food supply, but it appeared that

[1] For more on this, see Issue 15 of the Urban Agriculture Magazine.

the seasonal complementarity of other regions and the much-improved logistic system in China in recent years avoided any reduction in food supply. During the recent COVID-19 period, the logistics and management of regional cooperation maintained food security in Beijing. The food supply radius for Beijing can be as far as 1,200 km covered in a single day. Further research should evaluate the impact of this long food supply chain on the city's carbon footprint, compared with nearby greenhouse production in maintaining food variety, availability and prices.

Changing UA planning

Looking back, the key transition in UA planning and practice proceeded as follows:

1. The planning of agriculture in peri-urban Beijing followed changing development concepts and visions: from food provision for urban Beijing before the 1980s to multifunctionality during the 1990s and 2000s, adding or emphasising the ecological function of UA (increasing biodiversity to build a more resilient city and to address the challenges induced by climate change and other uncertainties or risks).

2. Aligning with these changes in planning focus, the land use pattern was also gradually altered: cultivated land was increasingly allocated to orchards and forests to enhance the eco-environment and agro-tourism, while also protecting farmland for vegetable production as a precondition.

3. To guarantee the food security for a growing urban population (currently around 23 million in Beijing), a new spatial and governance strategy was adopted that allowed smooth regional cooperation with other provinces. This involved developing the city's farmland enclaves (owned by and located in other provinces but operated and managed by stakeholders from Beijing, with their products serving the Beijing market).

Furthermore, the regional integration of Beijing, Tianjin and Hebei as a giant city cluster, the national rural revitalisation programme, preparations for the

winter Olympics and the COVID pandemic have all brought new challenges for the further development of UA in Beijing. Accordingly, Beijing's UA planning under the 14th five-year plan (2021-2025) introduced a more comprehensive and balanced strategy with a rather ambitious target. While there will be a continued emphasis on strengthening the eco-environment, increased effort is given to increasing the local food supply capacity: the overall local food supply rate will be increased to 20% in 2025, from 10% in 2020. In addition soil pollution will be reduced through recycling agro-waste and increasing the use of organic fertiliser. The forest coverage rate will be enhanced to 45% by 2025, from 42% in 2020. Several other ambitious targets have been set in the plan to balance the future development of Beijing, such as bringing down the income gap between urban and peri-urban regions, increasing income from agro-tourism, enhancing wastewater treatment and use, and increasing the number of agro-parks with zero-carbon emission.

The case of UA development in Beijing shows the importance of urban planning in guiding development and adapting to changing circumstances.

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Ownership and rules of the food planning process: reflections on South Milan Agricultural Park

The contribution by Quaglia and Geissler to the book "Integrating Food into Urban Planning" published by FAO and UCL Press (Cabannes & Marocchino, 2018) provides an opportunity to highlight some of the critical issues related to the use of technical and political tools in different approaches that, over the years, have been tested in the region around the city of Milan. Key issues in these approaches concern the relationship linking agriculture, territory and city.

Considerable experience has been gained from the South Milan Agricultural Park (PASM) that was established in 1990. It links the name "Park", intended to designate a protected area, with "Agriculture", an activity that in itself is not necessarily capable of producing environmental quality or protecting biodiversity. The PASM is a 47,000 hectare regional park that surrounds the city of Milan and managed by the Metropolitan City of Milan (in terms of Italian legislation this is comparable to a province) together with 60 municipalities. Within the park, 37,000 hectares are dedicated to agriculture: about a third for the production of rice, a third for the production of corn and the remaining 30% dedicated to other cereals, legumes and vegetables and to woodlands. There are also more than 300 farms, which are largely dedicated to milk production. The soil is very fertile and extremely rich in water (with rivers, a wide network of artificial canals and considerable groundwater) and, for a thousand years, this environmental quality has been closely linked to quality agriculture and related to the affluent market of the city of Milan. The PASM was also a response to the effects of the Green Revolution and to the rapid expansion of the city which, between the 1960s and 1980s, led to a major realignment of the

landscape, a substantial reduction in biodiversity, a significant increase in agricultural monocultures and the separation of agricultural production in this territory from the places of consumption in Milan.

It is interesting to note the coexistence of different cultural approaches that generated this creation. On the one hand, the history of the Park began with the implementation of a new planning tool (the Territorial Coordination Plan) with one of the basic concepts of sustainability being not to separate the production factors (the economy, in this case agriculture) from the instruments of environmental protection. Conversely, in the technical, political and institutional culture that determined the layout of the park, the regulation of land use was unknown and not accepted in the field of agricultural and rural policy.

As a result, urban planning tools, applied to the PASM, became a very important basis to resist some of the settlement pressures on agricultural areas. However, the Park has found itself unable to structurally orient the agricultural planning and policies (such as a transition to organic agriculture, land improvement and supply chain policies) towards more landscape-environment objectives such as riparian areas, buffer zones and ecological networks. However, despite this structural weakness, there has been an undoubted commitment by the Park to promote, using other tools, many initiatives aimed at enhancing the agriculture of the territory through the Park brand and support for local markets, multifunctional agriculture, educational farms etc.

Over the years, various instruments have been promoted to support the organisation of farmers in different forms (districts farms, cooperatives, consortia etc.). Although these instruments have strongly stimulated the capacity and willingness of farmers to act together, the weakness of this type of "rural development" initiative is that they have little binding power when it comes to planning issues and processes, even when the related funding and regulations declare support for environmental protection objectives in various forms. This weakness is linked to several factors such as the absence of land value control rules and the lack of rules that allow incentives to make cultivation advantageous on land where the overall plan prohibits building.

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The missing link in these tools concerns precisely the ability to interconnect active rural development policies to long-term planning and territorial protection objectives on the procedural, technical and legal levels. This is crucial to avoid considering peri-urban agricultural areas as "land not yet urbanised" rather than as places in which to invest in multifunctional agriculture that produces healthy food while also offering ecosystem services to the city (biodiversity, climate wellbeing, outdoor teaching etc.).

One of the lessons learnt from comparing the different tools tested in the Milan region is that not only the technical-legal quality of the rules that are established at the end of a process are important but also the quality of the process itself. If the outcome of the process includes a range of issues such as urban land use regulation, environmental quality or enhanced rural development policies, this requires integrated technical support and an institutional framework that matches this complexity.

Increasingly, there are similar plans in different international contexts that integrate these various components, but often these lack effective integration. Furthermore, this is often accompanied by a substantial number of research reports produced by sectoral experts (geologists, conservationists, agronomists etc.) or by additional rules and constraints, rather than focusing efforts on integrated policies.

In other words, the systemic aspects that are fundamental from a sustainable perspective are excluded. For example, in the construction phases of planning processes, integrated and synthetic knowledge is generally excluded, such as local knowledge (traditional, indigenous, site-specific etc.) and informal connections among actors and between these actors and their environment. Indeed, it is interesting to note that in none of the institutional processes cited by Quaglia and Geissler in their article have the more informal initiatives, at times presented as "alternatives", played a role. This seems surprising given that, over the years, they have had played a central role in facilitating cultural changes that are now widespread in Milan, and also in transforming a significant part of the "common" market into certified/non-certified organic, local markets, short supply chains with restaurants and shops, solidarity buying groups, solidarity networks and consumer cooperatives. In the past twenty years, formal and informal institutional processes seem to have developed in parallel without recognising the potential mutual advantages of the inclusion of knowledge, the construction of consensus, the recognition of innovative practices etc. Innovative practices and policies are a sort of "third way" in which the ownership of these processes is, at least in part, entrusted to inclusive coalitions of local actors that go well beyond the "consultation paths" that are formally provided through numerous pieces of legislation. This includes, for example, plans entrusted to non-profit foundations set up on a local basis and subject to periodic participatory verification.

Finally, there is a more general concern over institutional designs that maintain a separation between technical structures and political responsibilities relating to urban and territorial planning on the one hand and agricultural and rural policies. The idea of "building territory and society through agriculture" could become a guiding principle to promote the integration of departments and technical skills that could then manage "inclusive and long-lasting pacts" between city and country.

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A new breed of food planner for the triple paradigm shift

This section makes the case for an urban food planning revolution, with food systematically considered in wider urban planning and governance processes. There is an urgent need for a new professional breed of urban and regional food system planners.

As the range of experiences of food systems management translate into spatial terms and solutions (physical, land use plans, zoning regulations etc.), the role of urban and regional planners becomes ever more crucial in connecting the different components of the food systems and in linking up food-related issues with other urban sectors in an integrated and holistic way.

The lessons learnt from the articles and boxes presented in this section show that urban and regional food planners need to go beyond their professional boundaries and promote this holistic and multidisciplinary approach, and to foster of the development of sustainable food systems (urban, peri-urban and rural areas) that connect cities and towns to each other and with their rural surroundings.

With food systems training as part of their studies and professional development, hundreds of young talents may become proper planners of cities and city regions – individuals who are able, in a participatory way, to involve producers, urban farmers, and processors, retailers, vendors and other actors in formulating strategic food plans, master plans and sectoral plans tailored to cities and citizens' visions and expectations. Led by urban and regional food system planners, such plans must go beyond conventional land-based planning and evolve into land- and water- city planning.

What will be the key roles and qualities of such food planners? They should act as *facilitators* of community and producer-based participatory processes; *connectors* of actors and with policymakers; *advocates* within local governments for the integration of food into planning; and again *connectors* of the multiple sectors involved in the various steps of the food chain, from seeds to table. They should have the capacity to **synthesise multiple visions and produce plans** on different spatial scales.

Finally, they should consider, be part of, and facilitate the *triple paradigm shift* over the next twenty years for the mainstreaming of:

- **Urban Food Sovereignty**: going beyond top-down measures for urban food security with the meaningful inclusion and self-determination of citizens in planning processes.

- **The commons**, *"commoning"* and understanding food as a common: moving from food planning based on prevailing individual and corporate land rights, to planning that will facilitate and consolidate common land regimes, and food as a common. This can require Community Land Trusts and other communal, cooperative and collective forms of land tenure.

- **From urban agriculture to urban agroecology:** following the examples of cities on the frontline of urban agroecology, such as Quito, Rosario and Paris, with successful initiatives including local seed exchange, soil reclamation, and pesticide-free needs analysis and follow up (as also highlighted by The Global Alliance of the Future of Food, see article on p. 58).

We look to the new generation of planners, and the instructors that guide them, to turn their talents towards realising the triple paradigm shift – and igniting the urban food planning revolution.

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Governance

Governance: the underpinning of urban food actions

Governance of urban food systems is critical. It is the bedrock on which all policies, projects, programmes and interventions are built. Actions to strengthen or transform urban food systems flourish or fail on the strength of their governance arrangements — yet practitioners are often unsure how to set up and maintain arrangements that best suit their context and that will enable them to address future food systems challenges.

The articles in this section provide a rapid tour of urban food governance discussions, and draw on examples and good practices from cities in different parts of the world.

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By Jess Halliday

Urban food governance in 3D

Urban food governance is a complex, multi-dimensional beast. This article demystifies the terms 'horizontal', 'vertical', and 'territorial' governance, and establishes key questions that urban food actors must consider if they are to develop effective interventions to address food-related issues in their city or city region context.

The processes of making and implementing decisions relating to food are framed by the institutional arrangements, power dynamics, and actor relations in three dimensions: 'horizontal' governance at the level of the city itself; 'vertical', multi-level governance; and territorial governance.

Researchers and conceptual thinkers in the food systems community usually focus on just one or – at most – two dimensions. Yet all three have a significant bearing on the work of policy makers and practitioners. It is crucial that they understand the enablers and barriers stemming from each if they are to develop effective interventions to build food system sustainability and resilience.

What is governance?

Governance is a highly-contested term. It has different meanings to people from different backgrounds and disciplines, and definitions are all too often enshrouded in academic or technical jargon. For our practical purposes, governance is:

- the process of making decisions about what the food system should look like;
- the process of implementing those decisions, which can be articulated in policies, strategies, action plans, and programmes;
- the process of monitoring performance of policies, programmes and other interventions.

Governance also refers to who is involved in these processes, and the power dynamics that play out in them.

Importantly, governance is not top-down decision-making by government alone. Rather, governance involves non-state actors and organisations, such as farmers, food businesses, NGOs, community groups, academics, unions and associations, media, and other experts. These actors all bring to the table knowledge, experience, and perspectives; energy and innovation; complementary skills; increased capacity; and sometimes even financial resources.

Increasingly in cities formal governance processes take place in food platforms and multi-stakeholder groups, where some of these stakeholders participate in governance processes alongside local government representatives. Precise arrangements of these platforms can differ considerably, and it is by no means a given that all stakeholders have an equal say in decision-making.

Horizontal dimension

'Horizontal' governance refers to the historical, geographical, socio-economic, cultural, and political context of the city. This unique context determines local needs, preferences, priorities, and levels of social capital – that is, habitual interactions between sectors and networks towards the effective running of society. Since the context differs from city to city, food-related issues are handled differently, with the involvement of different actors, organisations, and sectors.

The last two decades have seen a trend towards multi-stakeholder urban food governance platforms, such as food policy councils, partnerships, and working groups (see the article by Carmen Torres Ledezma et al, p. 106). These platforms bring together local government and non-governmental food system actors to discuss food system issues and develop interventions, but their precise role, mandate, and way of working varies. In places with high social capital and engagement of senior policy-makers, they may advise policy makers or make recommendations that are subsequently taken up; where there is less social capital and weaker links to decision-making, their role may be largely advocacy-related, including identifying and monitoring food systems issues.

The degree of integration between departments with a food-related role also varies from place to place, coming down to habitual working practices and institutional culture, or the will of individual departmental heads to cooperate outside of their domain.

In the majority of cities, there is no single government department with sole responsibility for food. Rather, various departments are responsible for different aspects of the food system. For example, public health works on nutrition and food safety; the planning team is responsible for land use zoning and building use; social welfare is responsible for food insecurity, including emergency food provisioning; economic development is responsible for attracting and supporting businesses (including food business), and job creation; etc.

Where each department works in a separate, siloed way on its designated area of the food system, there is a risk that actions and approaches will be counter-productive – and may even cancel each other out (see box on p. 104 about the counteractive effects of siloed approach to food security and agriculture in Surabaya). Important issues may even fall between the cracks if each department assumes that it is handled by another.

Where departments work together to coordinate actions across their respective areas of responsibility, on the other hand, there can be greater, synergistic impacts and more efficient use of resources.

Vertical dimension

Vertical, or multilevel governance is the distribution of power, policy-making capacity, and responsibility between supra-national, national, regional and local levels. The vertical dimension determines the levers and instruments that city governments may use to effect food systems change, and precise city-level food policies and practical interventions can be either constrained or enabled by the policy preferences and frameworks at higher levels.

For example, in 2018 Amsterdam wished to curb advertising of unhealthy food to children as part of its Healthy Weight programme, but advertising policy is handled at the national level in the Netherlands. This meant the city could introduce curbs only across its public transportation network, where it controls advertising space. In the United Kingdom, local plans and spatial development strategies might include, for example, measures on agricultural land preservation or zoning on types of food outlet within a city.

Each local plan is subject to national examination, however, to ensure its consistency with the National Planning Policy Framework.

The national level is not always obstructive to progressive food policy. In a few cases successful urban policies have been recognised and adopted by the national level. For example, New York City's 2008 mandate for calorie labelling on city restaurant menus was taken up by the federal level in the United States two years later.

Concerted efforts are underway to foster greater inter-level food policy dialogue to create an enabling environment for local, city-based action, notably through a nascent coalition formed by the Urban Food Systems Working Group, convened by FAO and GAIN, as part of the legacy of the 2021 UN Food Systems Summit.

Even where there is apparent national–local coordination over food policies, however, it is not always without issues. In Surabaya, the development of a city Food and Nutrition Action Plan was mandated through the national policy framework, but city level actors were uncertain how much scope they had to adapt objectives to the local context (see box on p. 104). Moreover, political change at the national level can lead to sudden removal of supportive policies, programmes, and funding allocations. For example, in early 2019 Jair Bolsonaro, populist president of Brazil, dismantled the National Council for Food Security and Nutrition (CONSEA), thereby weakening the countries' entire national and sub-national food and nutrition security system.

Territorial dimension

The territorial dimension of urban food governance concerns inter-relations between actors in several local government jurisdictions that are located (wholly or partly) within a city region – that is, a geographical area comprising one or more urban centres and the surrounding peri-urban and rural hinterland. Food, people, goods, money, natural resources and ecosystem services flow across the administrative boundaries, meaning that some food system issues are best handled cooperatively, with the involvement of all relevant governmental and non-governmental stakeholders from across the city region.

The City Region Food Systems approach, developed by RUAF and FAO, aims to build cooperation between neighbouring municipalities through multi-stakeholder participation in the food system assessment and action planning process. The approach has been implemented in 11 city regions around the world to date: Antananarivo (Madagascar); Colombo (Sri Lanka); Lusaka (Zambia); Kigali (Rwanda); Kitwe (Zambia); Medellín (Colombia); Melbourne (Australia); Tamale (Ghana); Toronto (Canada); Utrecht (the Netherlands); and Quito (Ecuador).

In places where there is a regional or city region authority, there may be a 'nested' (or vertical) aspect to territorial food governance. One such example is the Greater Manchester city region (United Kingdom), where the Good Food Greater Manchester partnership is an umbrella organisation that supports the food activities of ten local governments.

Keeping all three dimensions in the picture

Taken together, the vertical, horizontal and territorial dimensions add up to a unique and complex food governance context for each city or city region. In practical terms, this means that all food-related issues on the table need to be examined using careful, three-dimensional thinking.

Such thinking will be considerably easier if there are actors from all three dimensions *around* the table – that is, membership of the multi-stakeholder platform that includes:

- all relevant local government departments, NGOs and food system stakeholders at the (horizontal) city level;
- individuals or organisations with a role and influence that transcends several vertical levels, such as, for example, (inter)national organisations or private sector businesses with their headquarters in the city;
- representatives of peri-urban or rural local governments within the city region, or regional agencies that broker inter-municipal coordination in relevant policy areas (such as an economic development board, a regional transportation authority, etc.)

The questions in the box on the next page may guide stakeholders' thinking over what can be done to address any given food issue in relation to the city. The answers – which will vary for each issue – will provide a basis for designing food policies and practical interventions that work within or around the constraints, and for maximising the enablers.

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Guiding questions for addressing an urban food issue, considering horizontal, vertical and territorial governance

- Which actors in the city have knowledge of the food issue, and skill and expertise to address it? What degree of influence do these actors have over decision-makers? How might their influence be increased?
- How can addressing the food issue contribute to addressing top-level priorities on the city agenda?
- How does the issue affect or concern the objectives of different government departments or NGOs? What common understandings are there between the departments or NGOs concerned, and what areas of potential confusion or miscommunication?
- How might multiple local government departments cooperate to bring about greater change/reinforce each-other's actions?
- What can be done about the food issue at the city level, using existing, attributed powers, responsibilities, levers and instruments, across local government departments and across sectors?
- What constraints are presented by policy preferences or framing from higher (national or regional) levels, or by party politics? Is there any way around them?
- How much national-local policy dialogue is there about the food issue? Is it possible to promote dialogue?
- What scope is there to adapt the objectives of national or regional framing policies to the local, urban context?
- How are neighbouring municipalities in the peri-urban and surrounding rural areas affected by the issue? Are their actions worsening the issue, or seeking to improve it? How might several municipalities coordinate a response for mutual benefit?
- Are there political differences that might obstruct cooperation?
- What might be done at the regional government level, using available powers, levers and instruments? Is there a 'nested' governance structure between the region and municipalities within it? How might this enable or constrain action across the territory? In what ways might regional action be constrained by the national level?

A systems approach to food governance: lessons from Nairobi

Samuel Ikua Thiong'o

Effective food governance is a prerequisite, and perhaps the most important condition for the realisation of food and nutrition security. From designing food policies through to promoting and regulating production and sale of food products, whether these issues are approached from a sectoral or a systems perspective has considerable bearing on coordination of food governance. Examples from Nairobi shows that a systems approach leads to better coordination than a sectoral perspective.

Enabling a systems approach: the institutional and policy framework

The multidimensionality of food – as a public health, environmental and human rights issue, among others – creates the need for a systems approach. Acknowledging this, the Nairobi Food, Agriculture and Forestry Sector created the Food Systems and Project Coordination Directorate. The Directorate coordinates the functions of the livestock, crops, fisheries and veterinary services departments, as well as other food-relevant sectors such as public health, trade, water and environment. In addition, the Directorate engages farmers' groups, CSOs and the private sector, depending on the particular agenda. This systems approach creates a comprehensive understanding of food issues, helping in the design and implementation of interventions

that are targeted and inclusive and deliver the desired outcomes for all actors.

In terms of policy support, the Directorate has developed the Nairobi City County Food System Strategy[1]. The Strategy spells out plans and approaches for addressing gaps in the Nairobi food system, through coordination between the government and other relevant stakeholders. The Strategy also emphasises the importance of food not only as a function of production but also of processing, distribution, consumption and waste management. This approach improves coordination among various components of the food system, thereby creating efficiency in food operations.

The other key policy is the Urban Agriculture Promotion and Regulations Act (2015)[2]. The Act requires the authorities to provide land or space and water for food production, especially for residents of informal settlements. This intervention ultimately requires coordination among those sectors responsible for agriculture, land, water and urban planning, thus enabling a systems approach to food governance.

How the systems approach is implemented

Democracy is at the core of Nairobi's food governance. This democratic principle is grounded in Kenya's constitutional requirement for public participation before any policy or legislation is passed. To implement this democratic principle, Nairobi has leveraged on multi-stakeholder mechanisms as platforms for state and non-state actors' interactions.

One of the initiatives is the Food Liaison Advisory Group (FLAG). FLAG is a multi-stakeholder platform comprising county authorities, farmers, traders and consumers groups, CSOs, the private sector and academia. The objective of FLAG is to support food system governance by identifying policy, practice, legislative and administrative gaps that hinder the sustainability of the Nairobi food system, and suggest measures to close those gaps. For context specific identification of gaps and proposal of suggestions, FLAG has working groups based on each component of the food system: production, processing, distribution,

consumption as well as food waste management. The multiplicity of actors in this platform helps bring together diverse perspectives on food issues, to generate relevant, targeted and coherent solutions. In doing so, FLAG aims to strategically influence county policies on food-related issues through inclusive decision-making processes. However, the sustainability and effectiveness of FLAG remain under question, as there will be only four meetings per year, the facilitation of which will depend on funding from external actors. Despite this limitation, the platform is a good start.

Another initiative is the Cross-Sectoral Consultative Group created by the Food Systems and Project Coordination Directorate. The Group brings together the education, health, environment, water, planning and trade sectors, and other interest groups, such as farmers and CSOs, to engage with the Directorate on food issues. Through this, stakeholders understand the interconnectedness of food as an agriculture, trade, environment, market and human rights issue, thus merging these diverse perspectives in designing interventions that are coherent with the objectives of the different sectors relevant to food. This Group was instrumental in the implementation of the RUAF-supported Milan Urban Food Policy Pact Monitoring Framework Pilot Project, which had various work streams relevant to the different food-related sectors. This Group, in comparison to FLAG, has proved more effective and sustainable as it is county-led and entrenched in Nairobi's administration.

In addition, Nairobi has an institutional approach for strengthening gender and social inclusion in food governance through the Office of the Gender Officer in the food sector. The Gender Officer addresses not only gender inclusivity but also the inclusion of marginalised segments of the society, such as the youth, people living with disability and those with compromised immunity. Applying this gender lens helps to identify unique food challenges and opportunities for the marginalized groups, which would not be possible if the population was viewed as a single 'box', without the advantage of a 'lens'.

[1] Nairobi City County Food System Strategy.
https://www.devolutionhub.or.ke/file/90185692-nairobi-city-county-food-system-stra.pdf
[2] Nairobi City County Urban Agriculture Promotion and Regulation Act, 2015
http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/NairobiCityCountyUrbarnAgriculturePromotionandRegulationAct2015.pdf

Apart from the structured approaches of the multi-stakeholder mechanisms, Nairobi engages the public and other stakeholders through public participation forums, which are a constitutional requirement. In this way, stakeholders can contribute to policies such as the five-year County Integrated Development Plan (CIDP) and the County Annual Development Plan (CADP). The latter includes a section on the year's food sector priority actions with an associated budget. However, the effectiveness of stakeholder participation in these forums is limited, as memoranda for participation are issued late, leaving little time for critical scrutiny of the policies. Unfortunately, these forums are held more for rubber-stamping to satisfy the legal requirement, rather than for genuine stakeholder consultation.

Other than interactions between state and non-state actors, there are also interactions between state actors in different state entities, where authoritative decisions are made. The state actors are the County Executive, the County Assembly and the County Public Service Board. The County Executive Committee Member for the food sector initiates and administers the formation and execution processes for the various plans (including CIDP and CADP). Plan formation addresses defining issues (agenda setting), defining strategies (formulation) and decision-making and approval by the executive and legislative authorities. Plan execution addresses the implementation and monitoring and evaluation.

Lessons learnt

Three key lessons are drawn from Nairobi's experience with food governance arrangements

1. **Democratic control rather than tokenism.** Adherence to Kenya's legally embedded democratic principles has enabled active stakeholder participation in food governance processes in Nairobi. However, this democracy is reflected more in participation and less in the outcome of these processes. Based on Sherry Arnstein's 'A Ladder of Citizen Participation' (1969), this can be seen as tokenism, where stakeholders are allowed to access information and express their views but without any guarantee that the voices of the concerned parties will be reflected in the outcomes. A preferable alternative would be democratic control, where stakeholders have the final decision-making power, rather than the state authorities.

2. **Issue-based multi-stakeholder mechanisms.** Issue-based platforms, such as the Cross-Sectoral Consultative Group, formed to address the multidimensionality of food, are more sustainable than project-led initiatives. The tendency for project-led initiatives to end when the project ends was seen with the Nairobi Food System Multi-stakeholder Platform that was established under the first phase of the FAO NADHALI project but never operationalised.

3. **Institutionalising the food systems approach.** Nairobi institutionalised the food systems approach by establishing the Food Systems and Project Coordination Directorate, effectively moving the approach from theory into practice. This Directorate has helped in the efficient coordination of the multidimensionality of food.

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A systems approach to food governance in Nairobi has proved to be a critical change agent in working towards better coordination for improving food and nutrition security. This approach creates efficiency in food operations in both supply and value chains, as well as opening up governance processes for active stakeholder consultation to influence policies through inclusive decision-making processes. Other cities in the Global South, and particularly in Sub-Saharan Africa, are invited to learn from Nairobi since they face similar food challenges and opportunities for which the systems approach would be effective.

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More information
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A Food and Nutrition Action plan for Surabaya

Jess Halliday

In 2018, Surabaya City became the first city in Indonesia to comply with a national requirement to develop a Food and Nutrition Action Plan via a participatory process. During the process, participants encountered and overcame challenges stemming from a previous culture of siloed working, and learned that a supportive national policy framework does not resolve all multi-level governance issues.

Indonesia's National Strategy on Food and Nutrition Security (Presidential Decree No. 83/2017) includes instructions for the development of Food and Nutrition Action Plans at national, provincial and district/city levels every five years. The National Food and Nutrition Action Plan (The National Development Planning Agency, regulation No 1, 2018) serves as guidance for the sub-national plans, including setting out the required responsibilities of different departments. Under this framework, the plan at each sub-national level is meant to conform with that of the next level up – i.e. the provincial level conforms with the national level; the district/city level conforms with the provincial level).

The development of the new Food and Nutrition Action Plan in Surabaya was led by the city's planning department, BAPEKKO. It was initiated following a prompt from the Indonesia office of GAIN (the Global Alliance for Improved Nutrition) and a local university with a planning department (*Institut Teknologi Sepuluh Nopember Surabaya*, ITS). ITS was the executive agency in the action plan development process, while GAIN played an advisory role.

An earlier, siloed plan

Surabaya's previous Food and Nutrition Action Plan was valid from 2011 to 2015, but it was never fully implemented. The outcomes of this plan were exclusively related to health. There was no consideration of how health outcomes would be impacted by questions of food affordability and access. As such, it was regarded as the sole responsibility of the city Department of Health and neither the Department of Food Security and Agriculture nor any other city departments or agencies were engaged.

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Surabaya also had a Food Security Council that was created by Mayoral Decree in 2010, with a membership comprising city officials from across relevant departments. The role of the Food Security Council was to develop policies in line with those of the provincial-level Food Security Council and to promote community participation. However, by 2017 members no longer held meetings and there were no active projects. As a result, inter-departmental communication and cooperation over food security and nutrition fell apart.

Breaking down siloes, finding common ground

To develop the new working plan, stakeholders were assigned to three working groups, each of which dealt with one or two of the five pillars of food and nutrition identified in the national Food and Nutrition Strategic Policy.

Working group 1
• Pillar 1: Community nutrition improvement
• Pillar 4: Clean and Healthy life habits

Working group 2
• Pillar 2: Increasing accessibility of diverse food
• Pillar 3: Quality and safety of foods

Working group 3
• Pillar 5: Coordination of Food and Nutrition Development

During the working group meetings some areas of incoherence and different interpretations between departments came to light. For example, the Department of Food Security and Agriculture tended to think about the availability of rice, meat and eggs in quantitative terms, but they did not think about how quality could be impaired by poor handling and storage, nor how practices to improve productivity, such as growth hormones in aquaculture, could have public health implications.

Some conceptual differences were also identified. Once such a difference concerned the definition of 'nutrition'. In national level regulation 'nutrition' refers to food components, whereas ITS understood it as individuals' nutrition status. The Department of Sanitation, meanwhile, insisted on including indicators on water, sanitation and hygiene, even though others thought these were not strictly 'nutrition'.

The multi-stakeholder process enabled these difficulties to be surfaced, discussed openly, and – where possible – addressed. Where consensus was not possible, stakeholders nonetheless acknowledged the issues and were able to work around them. The process created a new culture of coordination and communication between departments and agencies over food and nutrition. To this end, the Food Security Council, made up of officers from government departments and agencies, re-formed.

Vertical disconnections

The policy framework that requires vertical integration over food security and nutrition in Indonesia was undoubtedly a major factor in the development of the new Surabaya Food and Nutrition Action Plan. However, the case of Surabaya showed two potential problems with the need for a district/city to align its Action Plan with the national and respective provincial level plans.

The first problem was that it was unclear how much conformity was required with the issues contained in the National (2015-2019) and Provincial (2016-2019) Food and Nutrition Action Plans (some, but not all, of which were pertinent to Surabaya), and whether there were possibilities for adaptation to include Surabaya's own priorities that were not in higher-level plans. For example, the second pillar, "increasing accessibility to diverse foods", focuses on food production in the national policy, but in Surabaya productive land is scarce. The stakeholders decided it made more sense for

Surabaya's Action Plan to focus on food distribution and physical and economic availability of food. Another example concerns the different forms of malnutrition. Stunting is a national priority and is prominent in the national level action plan, while in Surabaya the rapidly growing incidence of overweight and obesity in children and adults meant these problems had to be represented.

The second problem concerned incoherence between policy lifespans at different levels. The Food and Nutrition Action Plan was integrated with Surabaya's Mid-term Development Plan, making the latter an important vehicle for budgeting and implementation of many of the key actions.

For the budgeting and implementation of activities not linked to the Mid-term Development Plan, it was necessary for the Food and Nutrition Action Plan to be first approved at the provincial level to ensure that it was in conformity with the East Java Food and Nutrition Action Plan, and then to be ratified by a Mayoral Regulation. However, the provincial Action Plan ran from 2016 to 2019, and had therefore expired by the time BAPEKKO granted its approval to Surabaya's Action Plan. This meant it was necessary to wait for the new East Java Food and Nutrition Action Plan 2020-2022, but this was not finalised by the time of Surabaya's Mayoral election in December 2020.

In 2021, a new Surabaya City Mid-term Development Plan was under development by the new Mayor and administration, framed by the new National Mid-term Development Plan 2020-2024. Consequently, a new Food and Nutrition Action Plan is required to be in line with the new Mid-term Development Plan.

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National and sub-national food systems multi-stakeholder mechanisms: an assessment of experiences

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Multi-stakeholder mechanisms have become a familiar feature of the food policy landscape at the national, regional and subnational levels, all around the world. This article summarises the findings of a major study that sought to understand the contribution of multi-stakeholder mechanisms in embedding a systems approach into efforts to support the sustainable food systems transition.

Multi-stakeholder governance mechanisms

In recent years, we have witnessed the emergence of Sustainable Food Systems Multi-stakeholder Mechanisms (SFS MSMs) at national, regional and sub-national levels. These are formal or informal participatory decision-making mechanisms that bring together diverse food system actors (e.g., government, private sector, NGOs, farmers) with different food-related agendas (e.g., the environment, health, trade, agriculture) from all stages of the value chain (from production to consumption) in an inclusive way to advise, develop or implement policies that promote sustainable food systems.

The emergence of SFS MSMs raises questions regarding the extent of their benefits, limitations and performance. They are a means to achieve sustainable food systems rather than an end in themselves. Evidence and data regarding their characteristics, effectiveness and outcomes remain vague and fragmented.

Against this backdrop, the study by the Alliance of Bioversity & CIAT, UNEP and WWF sought to identify, study and analyse national and

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sub-national SFS MSMs to understand and share their contribution to embedding a food systems approach in policy making processes that support the transition toward sustainable food systems.

Selection of 10 outstanding SFS MSMs

The study aimed to identify, analyse and compare examples of national or subnational multi-stakeholder mechanisms for sustainable food systems that:

• bring together, in an inclusive way, different food actors (e.g., government, private sector, NGOs, farmers) from all points of the supply chain (from production to consumption)
• connect actors with different food agendas (environment, health, trade, agriculture);
• are connected to the development and/or implementation of an existing holistic food policy or support an attempt at national or subnational level to embed a food systems approach in the food policy making process;
• preferably assign an active role to national or subnational government (mechanisms led by civil society or the private sector could be considered as long as the government is involved and the mechanism is working in the context of a policy agenda);
• are geographically balanced among world regions.

Based on these criteria, ten outstanding cases were selected and studied, three at the national level in France, Denmark and India; and seven at subnational level in Ghent, London, Montreal, Los Angeles, Quito, La Paz and Antananarivo.

Some key takeaways

Evidence emerging from this study shows that SFS MSMs that are truly inclusive, enjoy political and financial support, and have adopted good governance principles and processes are well-positioned to embody a systems-based approach and develop holistic food policies that better meet the needs of people and the planet. The SFS MSMs studied have helped to promote the inclusion of the topic of environmental degradation in the food agenda, an aspect which

is often forgotten, and have also embedded food-related issues into policy processes related to climate change and the environment.

Example achievements of SFS MSMs

• Organic Denmark is co-author of the world's first GMO Law and the world's first Organic Law. It has also developed eight additional action plans including climate and organic conversion goals for public kitchens, the world's first Organic Action Plan and national organic label, and the Climate Partnership for the Food and Agriculture Sector. Moreover, at the international level, Organic Denmark was co-lead on the EU process to ban GMOs in organic food and farming and was a contributor to the EU Organic Action Plan, the EU organic regulation and the C40 Good Food Cities Declaration (World Mayors Summit 2019). Organic Denmark has also successfully lobbied to embed sustainable organic food policies in larger national programmes and strategies for rural development, drinking water protection, pesticide control, green growth and in national, regional and city budgets.
• In Quito, the Pacto Agroalimentario de Quito (PAQ) has successfully lobbied to add food as a topic to Quito's Climate Action Plan 2050, Vision 2040 (city urban planning strategy), Quito's Resilience Strategy, the Metropolitan Development Plan and the Land Use Plan.

Other important lessons learnt from this research are:

• Political support, funding and institutionalisation are important drivers of long-term sustainability and success.
• Connecting across different levels with similar structures promotes networking and greater impact, something that is perceived as a key achievement by SFS MSMs stakeholders.
• Meaningful engagement and collaboration take time, effective leadership is paramount, and good facilitation is key to navigating controversial topics and fostering inclusive and constructive dialogue and decision-making.

A task that is still pending is to establish procedures that better address power imbalances and manage conflicts of interest, together with funding mechanisms to support the participation and capacity building of disadvantaged groups.

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Why urban food governance is never a done deal

Jess Halliday

This article makes the case for reflexive governance, and provides examples of how urban food governance platforms have shifted their methods or priorities, and in some cases reconfigured institutional arrangements, in response to changing circumstances. It draws on academic literature to provide a check-list for adaptive governance capacity – that is, governance arrangements that allow stakeholders to respond to sudden, dramatic ecological and environmental change.

Initiating actors of urban food governance platforms – such as food policy councils or partnerships – put considerable thought into the most appropriate and effective structure, institutional home, operating and decision-making procedures, and membership arrangements. These arrangements are often set down in terms of reference, which remind members of their commitment and can hold them to account over their engagement and performance. Specific tasks may be set out in strategies and action plans.

While these arrangements and plans might be optimal when they were drawn up, by no means should they be cast in concrete. Rather, stakeholders must build in flexibility so they can pivot at a moment's notice in response to changing circumstances, such as electoral change or a shift in civic or organisational priorities, or if the outcomes fall short of expectations. Put another way, urban food governance platforms should exercise reflexive governance.

Without reflexivity, a platform will struggle, and may even collapse, when it is maladapted to a shifting context and faces insurmountable barriers to fulfilling its purpose.

Reflexivity in action

There are a number of different approaches to reflexive governance, which are not necessarily mutually exclusive.

First, *governance arrangements can be changed as external circumstances change.*

For example, the structure of the food governance platform in Bristol, as well as the way it operates, has changed several times in the last decade in response to electoral change and to make the most of new opportunities. The food agenda's embeddedness within the grassroots community, and the persistence of committed activists, have been key to maintaining momentum through periods of change (see the article on p. 110).

In Toronto, Canada, the Toronto Food Policy Council and Food Strategy have been impaired by the shifting focus of Toronto Public Health, as well as the COVID-19 pandemic – yet the passion and expertise of members and supporters of the Toronto Food Policy Council is expected to lead to a new form of food advocacy in the city in the medium- to long-term (see the article on p. 112).

Second, *the primary framing of food policy work can be altered* in response to shifting political agendas – either due to electoral change or in response to new social challenges.

In London, UK, youth opportunities and training became a top priority of City Hall in August 2011, in response to widespread rioting across the city. As a result, the London Food Programme quietly shelved its implementation plan for 2011-2013 that refocused delivery of the London Food Strategy in the context of economic recession, climate concern, spending cuts and NHS reform. The Food Team within City Hall changed department, from Environment to the Business and Economy team (Halliday & Barling, 2018).

Third, *emerging issues, and programmes or projects to address them, can require new capacity, knowledge, and expertise to be brought on board.* Evidence from the USA indicates that some food policy councils review their membership on an ad hoc basis to ensure that proposals and projects are informed by expert knowledge and the lived experience of people who stand to be directly affected (McCullagh & Santo, 2012).

Fourth, *quick action needs to be taken when monitoring reveals serious unintended consequences of policies or programmes.* For example, the city of Amsterdam, The Netherlands, sought to reduce children's sugar consumption by banning all drinks in schools apart from water, as part of its Healthy Weight Programme. Many parents were unaware of the high sugar content in juice, however, and assumed their offspring were missing out on a healthy source of vitamins; they sought to make up for the perceived loss by providing excessive sugary fruit juice at home. To correct this misunderstanding, the city invited parents to an evening of educational theatre, which included the message that water is the healthiest drink (IPES-Food, 2017).

Fifth, *many urban food governance platforms programme periodic reviews of their achievements and, ideally, their structures and operations also.* Such reviews can be conducted by external evaluators, which ensures objectivity and can introduce new, independent thinking. The French city of Bordeaux launched a review of its food policy council *(Conseil Consultatif de Gouvernance Alimentaire Durable)* led by external consultants, to review both past experiences and to compare its model and results with food governance models in other cities. Such reviews are likely to be expensive, however, and resource-strapped food policy councils usually prefer to spend their funds on project delivery.

As an alternative, stakeholders may conduct their own self-evaluation, critically assessing their own performance and examining theirs – and each other's – assumptions and bias. One useful methodology is the Food Policy Council Self-Assessment Tool developed and tested by Larissa Calancie and colleagues at the University of North Carolina at Chapel Hill (Calancie et al., 2017).

Strengthening governance to face future challenges

Adaptive governance is the reorganisation of structures, decision-making processes, and rules and norms in a bid to increase resilience of socio-ecological systems to (unforeseen) ecological and environmental change.

This is underscored by the understanding that communities can govern common resources stably for decades, but their ability to do so can stop suddenly when change occurs. This is particularly relevant in the current context of climate emergency and pandemic. The academic literature provides a checklist of prerequisites for being able to adapt quickly (see box). Thus, while carrying out reflexive reviews, actors involved in urban food policy structures.

Adaptive governance in action

In 2021 Alison Blay-Palmer and colleagues from FAO and RUAF (Blay-Palmer at al., 2021) found that cities that had previously adopted a city region food system approach – including establishing multi-stakeholder governance platforms – had greater capacity to bridge supply failures and respond to emergency needs during the COVID-19 food crisis in 2020. Even so, some cities with a long history of food governance (such as Bristol, UK) still encountered difficulties in coordinating emergency responses, signalling scope to improve performance on the eight prerequisites for adaptive capacity.

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The first checklist was developed in 2003 by Thomas Dietz and colleagues (Dietz et al., 2003), who set out four prerequisites for adaptation occurring within governance structures:

- inclusive dialogue and deliberation *(analytic deliberation)*;
- complex institutional arrangements at multiple levels *(nesting)*;
- use of a variety of rules drawn from hierarchical top-down government systems, market incentives, and community self-governance mechanisms *(institutional variety)*; and
- facilitation of experimentation, learning and change.

Carle Folke (2006) took up this list in an exploration of the social-ecological systems in moments of crisis and subsequent renewal and reorganisation, adding:

- the generation and mobilisation of scientific learning from various fields *(knowledge, learning and practice)*;
- the capacity of leaders to learn from experiences and for their organisations to retain that knowledge *(organisational learning)*;
- local community-based resource management systems working with, and support from, organisations at various levels *(co-management)*; and
- the devolution of power into participatory social network structures *(social capital)*.

More information

This article draws on a chapter entitled 'Conceptualisations of urban food governance' by the same author in the Routledge Handbook of Urban Food Governance (see the article on p. 112).

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Beyond Gold: Bristol's ever-evolving food governance journey

Jess Halliday

The formal food governance story of Bristol (UK) is one of continual adaptation to changing circumstances. Over the last decade the Bristol Food Network of grassroots activists has been an engine for ongoing engagement of both local government and citizens, while the creation of an informal group of key actors (from all sectors) provided a space for behind-the-scenes strategizing, building relationships, and mutual support.

The city of Bristol in South West England has an active civil society sector and a history of advocacy around food reaching back to the 1990s. The Bristol Food Policy Council (BFPC) was formed in 2011, following the publication of the Who Feeds Bristol Report on the sustainability and resilience of the city's food system[1] (commissioned by Bristol City Council, NHS Bristol, and Bristol Green Capital Partnership), and with the encouragement of high-profile academic Professor Kevin Morgan (who served as the BFPC's first chair).

The institutional home of BFPC was a neutral space, neither under any civil society organization nor part of Bristol City Council (BCC) – although secretariat services were provided in turn by BCC sustainability and public health teams and there was a seat for an elected Councillor (from 2012 to 2016, the Councillor was assigned from the cross-party cabinet of the then-Mayor George Ferguson). Other members included a representative of Bristol Food Network (then an informal community group and email list, but later formalized as a Community Interest Company), and representatives from across the food system of the city and surrounding area.

The full BFPC met four times a year. In 2012 the members acknowledged a need for communication around the term 'good food' and developed the Bristol Good Food Charter. They established a communications sub-group, which met monthly in an informal setting, usually a café. The sub-group's approach was guided by four 'tions: immersion, implication, reciprocation, and facilitation. Over time, this sub-group became a strategic hub for key food actors in the city.

Electoral change

The election of a new mayor, Marvin Rees, in 2016, led to a shift in priorities over food within the city. While the BFPC continued to meet, with the support of some Councillors, there was a need to re-frame the agenda with a greater emphasis on poverty, inequality and social inclusion.

Also in 2016 in the same week of the elections, Bristol became one of only two cities in the country to receive a Silver award for its food work from Sustainable Food Cities Network (a UK network run by civil society organization, now Sustainable Food Places or SFP)[2].

The community leadership of Bristol Food Network was crucial for ensuring ongoing momentum through the transition. The BFPC's new recipe, underpinned by the principle of immersion, involved taking a broad range of stakeholders on learning visits to key food sites in the city – such as FareShare South West's surplus food redistribution warehouse and Grow Wilder, a nature-friendly food growing demonstration and training site. These visits sought to provide immersive learning experiences and enable new relationships to be built and cemented.

On the side of BCC, Councillor Asher Craig, Deputy Mayor with responsibility for children's services, education and equalities, emerged as a critical figure for ensuring the new administration's engagement in the food agenda. She championed Bristol City Council's Good Food & Catering Procurement Policy and secured cabinet approval in March 2018. The preparation for this new policy was undertaken by BCC staff who also participated in the BFPC. Approval of this new policy provided new confidence and a secure entry point on which to build next steps

Going for Gold

Between 2016 and 2018, the BFPC – and in particular Bristol Food Network – pushed to start the process of taking Bristol's food work to the next level: pursuing a Gold SFP award. This would require a proper steering group.

Formal BCC approval to go for the Gold award was granted on 11th April 2018, at a meeting attended by the BFPC communications sub-group, a representative of SFP, and senior managers of Bristol City Council. The process was funded by a grant from SFP and match funding from Bristol City Council.

From this point onwards, the Going for Gold (GFG) steering group became the main formal governance platform in Bristol. Institutionally, the GFG steering group was a shared space between Bristol Food Network, Bristol Green Capital Partnership and BCC. It was chaired by Cllr Craig, and members represented a range of other organisations with a food remit (see box). Bristol Food Network played a coordinating role, with in-kind support and some funding for project work from the BCC public health and sustainability teams. Bristol Food Network also secured additional, external funding. The steering group met quarterly, but there were many bi-lateral meetings between members.

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> ## Organisations represented on the GFG Steering Group
>
> - City Council (Public Health, Sustainable Cities, Comms, City Office, Emergency response)
> - Bristol Food Network
> - Bristol Green Capital Partnership
> - Resource Futures
> - Feeding Bristol
> - Grow Wilder (Avon Wildlife Trust)
> - Incredible Edible Bristol
> - Bristol Food Producers
> - West of England Food Procurement Group
> - Essential Trading (sponsors)

With the formation of the GFG Steering group, the BFPC became dormant. The communications sub-group continued to meet, however, as an informal, mutually supportive group of key food actors until the start of the COVID-19 pandemic in February 2020. Still adhering to the four '-tions, the group did a lot of important 'behind the scenes' work, orientated newcomers to the Bristol food scene, and built and cemented relationships.

Signing the Milan Urban Food Policy Pact

Also on the agenda of the meeting in April 2018 was the proposal for Bristol to sign the global Milan Urban Food Policy Pact (MUFPP). In September 2018, Cllr Craig accompanied director of Bristol Food Network and consultant Joy Carey to the MUFPP Annual Gathering in Tel Aviv, where she signed the MUFPP on behalf of the Mayor. This additional immersive experience consolidated her appreciation of how much volunteer time and activist energy has gone into Bristol's food journey over the years.

Cllr Craig has since shared Bristol's experiences and advocated urban food systems work at high profile international events, including the 2021 United Nations Urban Food System Pre-Summit[3].

Next steps: Good Food 2030

Bristol received the Gold Sustainable Food Places Award in July 2021[4], thanks to the amazing hard work, innovation and collaboration of the city's good food movement.

As of Spring 2022, the GFG Steering Group is undergoing reconfiguration as the Good Food 2030 Steering Group, which will take up the baton as the city's multistakeholder food platform. The precise structure and operational mode will be informed by stakeholder capacity and funding, but Bristol Food Network – a constant feature through all evolutions of Bristol food governance – will continue its coordinating remit.

The main role of the GF2030 steering group will be to develop and oversee implementation of the Good Food 2030 Action Plan, which will detail and track progress off the food-related work of council departments, agency and organisations towards achieving the targets of the One City Plan (the corporate strategy and the Climate and Ecological Emergency plan. As such, the GF2030 Action Plan will be the centre piece for integrating and institutionalising food throughout Bristol.

The author thanks Joy Carey, Dr Angela Raffle, Jane Stevenson, Ellen Harrison.

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Credits: Top row LtoR: Alive Activities; Children's Kitchen; Good Sixty; Bristol City Council. 2nd row LtoR: 1st & 2nd images from Going for Gold videos; Rise, The Matthew Tree Project; Going for Gold video; Refugee Women of Bristol. 3rd row LtoR: Victoria Park Primary School; 2nd & 3rd images taken from Going for Gold videos; Wild Oats; Going for Gold video. 4th row LtoR: 1st image Stef Wetherell; 2nd & 3rd images taken from Going for Gold videos; Propagation Place; Going for Gold video

[1] Carey, J. (2011) Who Feeds Bristol: Towards a resilient food plan. https://www.bristol.gov.uk/documents/20182/32619/Who-feeds-Bristol-report.pdf
[2] Sustainable Food Places. https://www.sustainablefoodplaces.org/

[3] UNFSS Pre-Summit plenary: Cities and local food systems. https://vimeo.com/user145891411/download/582456501/26b308807c
[4] Bristol named Gold Sustainable Food City. https://www.goingforgoldbristol.co.uk/bristol-named-gold-sustainable-food-city/

Toronto food governance in flux

Jess Halliday

The recent disbanding of Toronto Food Strategy team and de-funding of the Toronto Food Policy Council demonstrates that even the most long-established, apparently institutionalised food governance structures are vulnerable to circumstantial change, such as pressures from the pandemic and other emergencies, the threat of budget cuts, as well as shifting political priorities when a new provincial leader takes office.

The Toronto Food Policy Council (TFPC) was established in 1991 as a sub-committee of the Toronto Board of Health, at a time when preventative public health was gaining traction among senior officers who saw the importance of including food in public health policy.

Over the next 30 years the TFPC gave voice to all food interests in the city, across multiple sectors. It served to connect people from the food, farming and community sectors to develop innovative policies and projects to support a healthy sustainable food system. In 2011 the Toronto Food Strategy was launched, with the aim of integrating food-related work into the objectives of all city government departments. A Toronto Food Strategy team of eight was established within Toronto Public health.

In 2019, however, the Provincial Government – under Premier Doug Ford – announced plans to cut Can$1 billion in funding to Toronto Public Health over the coming decade. Among wider impacts on the work of Toronto Public Health, the plans were acknowledged to pose a direct threat to the TFPC, several food and nutrition programmes, and to the food strategy team.

These stringent financial cuts did not become reality, yet the announcement caused significant upheaval within Toronto Public Health and consternation among TPFC members. At the same time, a change in leadership of Toronto Public Health led to shifting priorities, including less focus on healthy public policy and the food systems work. Within this context, the Toronto Food Strategy team dwindled as staff retired or left to take up new employment outside of the City of Toronto.

When COVID-19 hit in early 2020, city leadership called on charities to lead the emergency food response and did not immediately use the expertise, research and analysis of the TFPC and the Toronto Food Strategy team. In other words, Toronto, like many cities the world over, was lacking an effective emergency food plan. All Toronto Public Health resources were deployed to pandemic response. While this was deemed essential at the time, it sealed the demise of the food strategy and led to the defunding of the TFPC.

As of early 2022, new food systems initiatives have taken root. For example, City Council endorsed and funded a Black Food Sovereignty Plan to address chronic food insecurity, anti-Black racism, and structural inequities in Toronto's food system and which recognized the racial inequities of the food system. The TFPC no longer meets regularly although the long history, passion and expertise of TFPC members and supporters will likely result in some other form of food policy advocacy in the City of Toronto in the medium to long term.

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Forthcoming: Routledge Handbook of Urban Food Governance

Ana Moragues-Faus
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The last twenty years have witnessed a soaring academic and applied interest in governing urban food systems. This interest is the result of a number of intersecting issues, including: dissatisfaction with the food system and its economic, health, ecological and social impacts;

the growing awareness around the complexity of food and therefore the need to adopt a systems thinking approach; increased role of cities in shaping cultural discourses and global socio-ecological dynamics; and the emergence of novel co-governance approaches where civil

society, the public and private sector come together to make decisions.

These overlapping issues have led to a diversity of theoretical and practical approaches to study urban food governance, which largely remain disconnected. The historic lack of 'ownership' of urban food governance by any single department of state and any single external stakeholder, as well as its study from different academic disciplines, has enabled the field to be particularly innovative, dynamic and responsive to new global and local challenges – such as climate change or geopolitical restructuring. While there has been an upsurge in interest, urban food system governance is not new, and historic governance of food systems has in many ways shaped the wider urban form and contemporary urban dynamics.

In this context, the Routledge Handbook of Urban Food Governance aims to unpack the power of urban food governance and its capacity to affect lives through the transformation of cities and the global food system. The peer-reviewed Handbook is the first collection to reflect and compile the currently dispersed histories, concepts and practices involved in the increasingly popular field of urban food governance. This critical and collective exercise contributes to reassessing the role of cities in delivering sustainability and food security outcomes, and provides refreshed theoretical and practical tools to understand and transform urban food governance to enact more sustainable and just futures.

The Handbook is structured in five sections. The first section focuses on histories of urban food governance to trace the historical roots of current dynamics and provides an impetus for the critical lens on urban food governance threaded through the handbook.

The second section presents a broad overview of the different frames, theories and concepts that have informed urban food governance scholarship. Section three builds on the foundation of the first two sections to engage with the practice of urban food governance by analysing plans, policies and programmes implemented in different contexts. Section four presents current knowledge on how urban food governance involves different agencies that operate across scales and sectors. Section five asks key authors in the field what the future of urban food governance holds in the midst of pressing societal and environmental challenges. In order to compile state of the art knowledge, the Handbook of Urban Food Governance draws on

academics' and practitioners' knowledge, and features studies from established and emerging scholars from different geographies. The Handbook is a collective effort developed in the midst of the COVID-19 pandemic and as the world faces critical ecological and social emergencies. As editors, we are deeply grateful to all contributors for their time and effort in developing this unique compilation of knowledge which constitute an essential guide to understanding, reflecting and actively engaging with urban food governance and its transformative potential.

The Routledge Handbook of Urban Food Governance will be published in October 2022. For more information:
https://www.routledge.com/Routledge-Handbook-of-Urban-Food-Governance/Moragues-Faus-Clark-Battersby-Davies/p/book/9780367518004

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The next phase of urban food governance thinking

In recent years much work has documented, analysed, systematized, and made recommendations concerning urban food systems governance. Some clear points of consensus have emerged, such as the need for multi-stakeholder participation, institutionalization for the long term, and an enabling environment from the multilevel dimension. The articles in this section show that some big issues are still to be resolved, however, and doing so will take more effort by practitioners from all sectors and academics.

Samuel Ikua reminds us that the food systems approach is fundamental to integrated horizontal governance within a city – yet understanding of this approach is uncommon outside of specialist circles. **More work to initiate city officials from all departments, and other stakeholders, in how food systems work, and to engage them in governance processes.**

The report on multi-stakeholder mechanisms by Carmen Torres Ledezma and colleagues shines a light on questions of meaningful participation, particularly of disadvantaged groups. They recognize a need to **explore ways of addressing power imbalances and managing conflicts of interest.**

Integrated food systems governance at the horizontal, city level – while vital – is not enough on its own. It must be combined with the more relational multilevel and territorial governance dimensions that frame the processes. However, the **precise ways and means through which other governance levels can support city initiatives are not yet clear**, and we must be wary of assuming multi-level policy frameworks are always helpful. The territorial dimension, meanwhile, remains marred by the **persistent disciplinary divide between urban and rural studies, and poor understanding of the multiple, deep connections** between cities, peri-urban areas, and the countryside.

We have seen that determining food systems governance is not a one-off job – yet project budgets all too often support governance platforms for just a few years, leading to collapse once the coffers run empty. **Tactics must be found to perpetuate platforms for the long term**, including ensuring on-going engagement by stakeholders and – vitally – ongoing, institutionalized funding.

That said, even the most well-established platforms that have survived for decades are never truly safe from shifting agendas. Thus, while every effort should be made to institutionalise food governance arrangements, this should be done with one eye on **alternative ways to keep food on the urban agenda.**

To this end, the experiences of Bristol and Toronto show that food systems governance is not only about formal processes involving local governments. Processes also take place among community activists and movements that work tirelessly in many places to strengthen food systems and advance transformation, and provide much-needed consistency through waning political will, as well as the memory of past events. **Often poorly acknowledged and behind-the-scenes, community food governance must be promoted and harnessed.**

Finally, at a time when food systems, both global and urban, face unprecedented disruption from multiple crises – from the climate emergency to pandemics to inter-state conflict – adaptive governance capacity is ever more essential. **The checklist of requirements for being able to adapt rapidly to changing circumstances must be thoroughly tested in practical settings. It must be revised for use in urban food systems work.**

Key resources

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- **Routledge Handbook of Urban Food Governance**
  https://www.routledge.com/Routledge-Handbook-of-Urban-Food-Governance/Moragues-Faus-Clark-Battersby-Davies/p/book/9780367518004

  Full reference: Moragues-Faus, A., Clark, J, Battersby, J., & Davies, A. (eds). (2022) The Routledge Handbook of Urban Food Governance. London: Routledge.

- **Urban food systems governance. Current context and future opportunities**
  https://www.fao.org/documents/card/en/c/cb1821en

  This report presents insights and emerging lessons on food systems governance from the experience of nine cities that have developed urban food interventions and draws on secondary information relating to experiences of other cities. It highlights entry points for the governance of urban food systems issues; common procedural and content-related considerations when addressing those issues; predominant governance models; and operational opportunities for future investment.

  Full reference: Tefft, J., Jonasova, M., Zhang, F., & Zhang, Y. (2020). Urban food systems governance – Current context and future opportunities. Rome, FAO and The World Bank.

- **Urban Agriculture Magazine no. 36 – Food Policy Councils**
  https://ruaf.org/document/urban-agriculture-magazine-no-36-food-policy-councils

  A growing number of cities and regions are forming Food Policy Councils (FPCs) and similar groups known by other names, such as multi-stakeholder food forums/platforms, food policy networks, food boards, food coalitions, food partnerships, and food labs. This magazine explores the experiences of FPCs and similar entities, on their approach to inclusiveness, documented impacts, and challenges faced.

  Full reference: Halliday, J., Torres Ledezema, C., van Veenhuizen, R. (2019). Food Policy Councils, Urban Agriculture Magazine, No. 36.

- **Multistakeholder policy formation and action planning for sustainable urban agriculture development**
  https://ruaf.org/document/multi-stakeholder-policy-formulation-and-action-planning-for-sustainable-urban-agriculture-development

  This working paper gives an overview of lessons learned under the Cities Farming for the Future programme with multistakeholder policy formulation and action planning (MPAP). It discusses the importance of interactive and participatory processes of policy formulation and action planning, presents the MPAP process and the different steps to be taken, and highlights lessons learned thus far by RUAF partners and several other organisations. In subsequent working papers the elements of the MPAP will be dealt with in more detail.

  Full reference: Dubbeling, M., de Zeeuw, H. n.d. Multistakeholder policy formation and action planning for sustainable urban agriculture development, RUAF.

- **National and Sub-national Food Systems Multi-Stakeholder Mechanisms - An Assessment of Experiences**
  https://www.oneplanetnetwork.org/knowledge-centre/resources/national-and-sub-national-food-systems-multi-stakeholder-mechanisms#section-supporting-documents

  Full reference: Alliance of Bioversity & CIAT, UNEP and WWF (2021). National and Subnational Food Systems Multi-Stakeholder Mechanisms: an assessment of experiences.

- **Policy brief: Governance of food systems transformation**
  https://ecoagriculture.org/publication/governance-of-food-systems-transformation

  This policy brief defines Food System Governance, presents Guiding Principles for Food Systems Transformation, outlines a human-rights based approach to governance, and lays out key dimensions of effective food system governance. The brief concludes with a recommendation to develop a community of practice to advance innovation and learning on food systems governance.

  Full reference: Scherr S., Ramos J. (2022). Policy brief: Governance of food systems transformation, Governance Action Area, UN Food Systems Summit.

Credits: ©EFUA

Upcoming issue: Enabling Multiple Benefits of Urban Agriculture: Lessons for Policy (December 2022)

The next issue of the Urban Agriculture Magazine, No. 39, planned for December 2022, will be a special edition aimed at informing policy and promoting transformation in the sector, presenting various programs and their impact.

There will be a special section on the European Forum on Urban Agriculture (EFUA), including an introduction to the project, case studies, stories of positive transformation, policies and best practices to enhance and valorise the multiple benefits of urban agriculture. It will also provide insights on the EFUA expert meetings at Milan Urban Food Policy Pact global summit.

Other sections will complement the magazine, with contributions from HealthyFoodAfrica, YouthFood, Healthy Neighbourhoods, and Resilient Cities programmes, showcasing experiences and major lessons on the ground in the global south.