UN environment programme

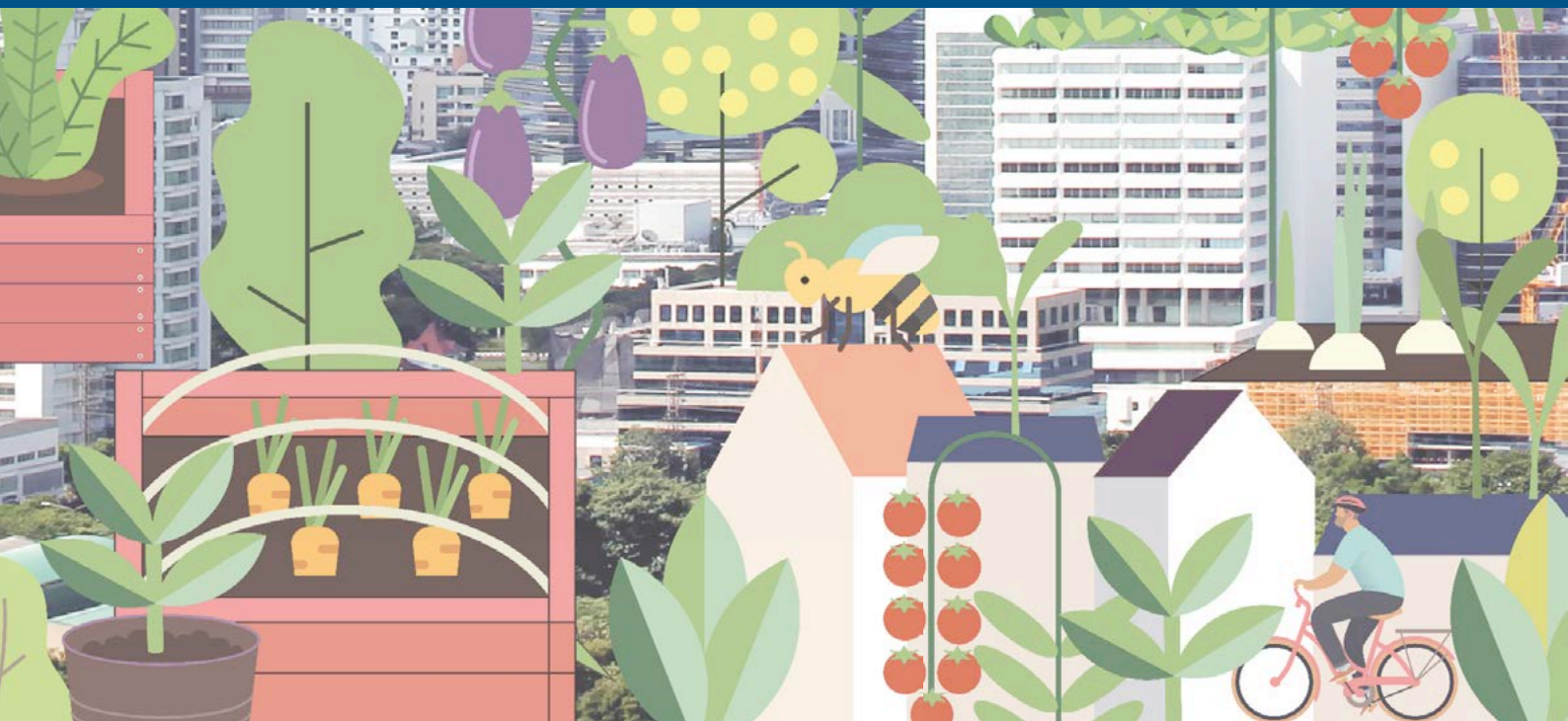
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LESSONS LEARNED REPORT

Integrating a systems approach into sustainable urban and peri-urban agriculture initiatives and policies





List of Acronyms

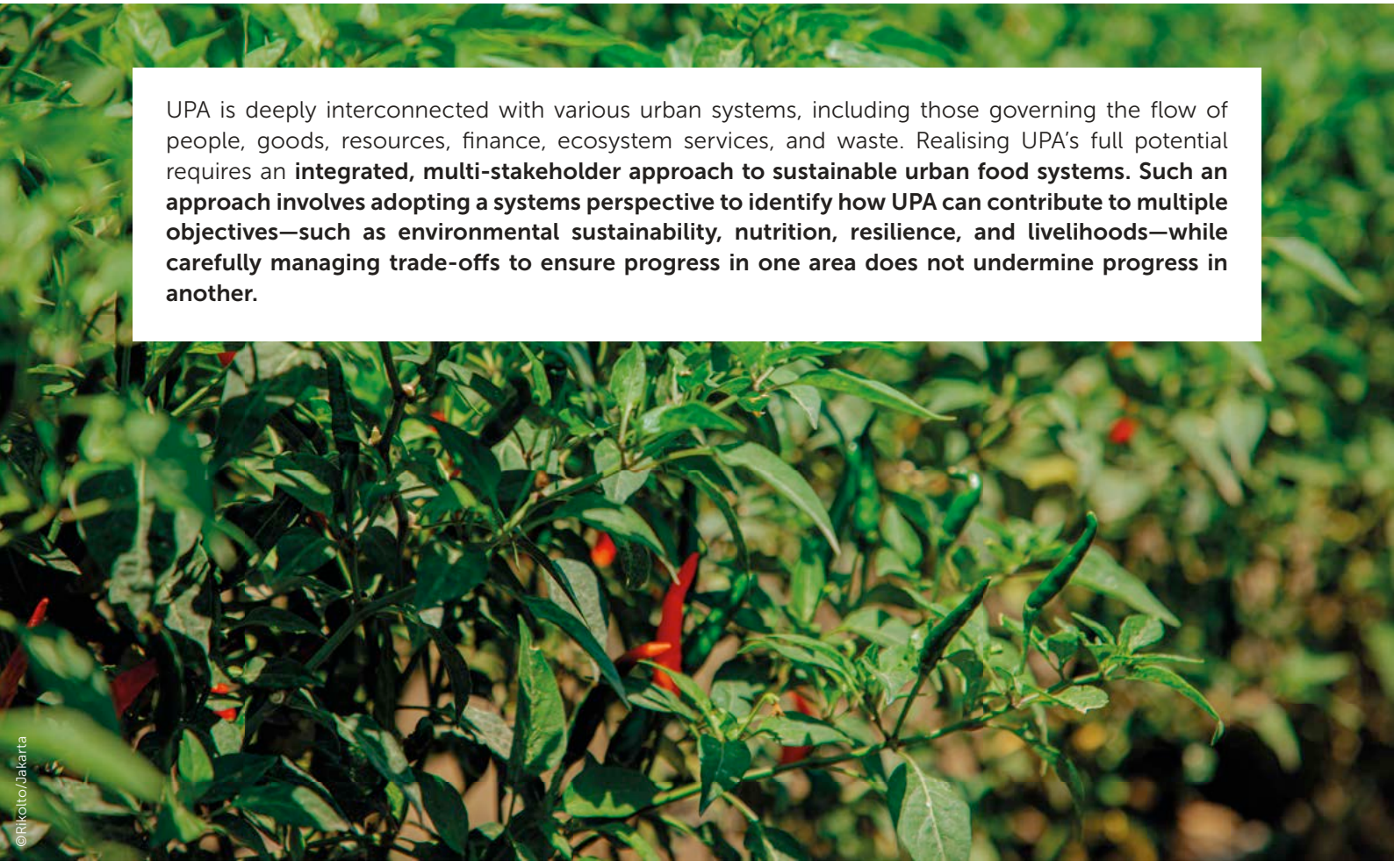
CoP-FSAG	Community of Practice on the Food Systems Approach on the Ground
FAO	Food and Agriculture Organization of the United Nations
FOAG	Swiss Federal Office for Agriculture
IDR	Indonesian Rupiah
IPCC	Intergovernmental Panel on Climate Change
IRP	International Resource Panel
KCCA	Kampala Capital City Authority
MoC	Ministry of Construction (Vietnam)
NAP	National Action Plan on Food Systems Transformation (Vietnam)
NBSAPs	National Biodiversity Strategies and Action Plans
NDCs	Nationally Determined Contributions
NGO	Non-Governmental Organisation
OPN SFSP	One Planet Network Sustainable Food Systems Programme
RUAF	Global Partnership on Sustainable Urban Agriculture and Food Systems
SDPP	Sub-Department of Plantation and Plant Protection (Hanoi)
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UPA	Urban and Peri-urban Agriculture

Background

Urban and Peri-urban Agriculture (UPA) has garnered growing interest from local governments and citizens as a strategy to enhance urban resilience against various shocks, while also contributing to improved nutrition, sustainable livelihoods, and reduced environmental pressure (FAO et al., 2022). Food consumption in cities represents one of the largest sources of urban material flows, carbon footprints, and land footprints (Goldstein et al., 2017, in IPCC, 2019). Meanwhile, in 2010, approximately 14% of the global population was nourished by food grown in urban and peri-urban areas (Kriewald et al., 2019, in IPCC, 2019).

Although UPA typically cannot produce sufficient volumes to meet the entire food demands of urban populations, UPA can play an important role in improving the accessibility and affordability of nutritious food. By complementing existing urban food markets, UPA helps make cities more resilient to environmental shocks, offers recreational opportunities for citizens, and supports the livelihoods of urban and peri-urban farmers. The Intergovernmental Panel on Climate Change's 2019 Special Report on Climate Change and Land emphasised UPA's contribution to urban food security, greenhouse gas emissions reductions, and climate adaptation. Similarly, Vietnam's Ministry of Construction (MoC, 2020) underscored UPA's role in recycling waste, reducing pollution, protecting ecosystems and landscapes, managing resources sustainably, and improving air quality – benefits that collectively enhance residents' quality of life. Other countries recognise UPA in similar ways.

However, UPA faces growing challenges from rapid urbanisation and migration, which increase competition for land. Peri-urban agricultural areas are frequently repurposed for industrial zones, infrastructure, and housing, eroding natural spaces and diminishing ecosystems' ability to provide critical services.



UPA is deeply interconnected with various urban systems, including those governing the flow of people, goods, resources, finance, ecosystem services, and waste. Realising UPA's full potential requires an **integrated, multi-stakeholder approach to sustainable urban food systems. Such an approach involves adopting a systems perspective to identify how UPA can contribute to multiple objectives—such as environmental sustainability, nutrition, resilience, and livelihoods—while carefully managing trade-offs to ensure progress in one area does not undermine progress in another.**

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Box 1 – What is sustainable urban and peri-urban agriculture?

Urban and peri-urban agriculture (UPA) has significant potential to contribute to more sustainable food systems by protecting ecosystems, reducing waste, lowering greenhouse gas emissions, and supporting climate adaptation. However, not all forms of UPA are inherently sustainable or regenerative. The sustainability of UPA depends on the practices and inputs used, as well as its interactions with the surrounding landscape, including its impacts on specific actors and ecosystems, which can be either positive or negative. Conventional agricultural practices—such as those involving intensive pesticide use, soil-degrading methods, or excessive water consumption—can generate negative externalities for urban ecosystems and public health. In contrast, sustainable UPA is characterised by practices that conserve biodiversity, minimise chemical inputs, close nutrient cycles, and protect ecosystems. It emphasises efficient management of natural resources, reduction of production-based greenhouse gas emissions, regeneration of soils, and safeguarding of water sources. Moreover, sustainable UPA creates synergistic benefits by contributing not only to environmental sustainability but also to social, recreational, nutritional, economic, and health improvements for urban residents.



Since 2022, the United Nations Environment Programme (UNEP) and Rikolto have joined forces to promote the integration of a food systems approach into the development of sustainable urban and peri-urban agriculture initiatives and policies in four cities: Kampala, Uganda; Hanoi, Vietnam; Surakarta, Indonesia; and Arusha, Tanzania.

This collaboration aims to:

- Support Local Government Authorities and other stakeholders in embedding a food systems approach and circular design principles into decision-making and policy processes for UPA interventions.
- Increase knowledge and awareness by disseminating scientific evidence on the benefits of UPA and its contribution to sustainable food systems.
- Foster multi-stakeholder collaboration, including across multiple levels of governance, to promote more integrated UPA practices.
- Propose concrete entry points and policy guidance based on mapping existing UPA initiatives, actors, and policies in these cities.

As part of this initiative, Rikolto organised training sessions and multi-stakeholder discussions in all four cities, as well as in Semarang, Indonesia, in 2023 (the latter was managed by WAIBI, an Indonesian NGO). These trainings, designed for key stakeholders, covered topics such as UPA, the food systems approach, urban food governance, and multi-stakeholder collaboration. They emphasised the multiple benefits of UPA while addressing potential risks and trade-offs between conflicting objectives. Participants were introduced to systems thinking principles and learned how to apply them in the context of UPA policy development. The training materials included an overview of existing UPA initiatives in the area, a mapping of key stakeholders, and an analysis of relevant national and local policies affecting UPA, helping tailor the training's key messages to the unique context of each city. Each training session concluded with a review and discussion of location-specific recommendations to put these principles to life in their own context. In addition, Rikolto and UNEP have partnered on the implementation of integrated and sustainable UPA pilots in Kampala (2021), Arusha and Hanoi (2024-25). The UPA pilot projects aim to demonstrate the feasibility and benefits of urban and peri-urban agriculture by strengthening producer-consumer connections and generating evidence to inform policy. The initiatives focus on community-based urban farming, mentoring activities in schools, capacity building, and knowledge-sharing in collaboration with local authorities.

Programme participation and outputs

216	56%	42	4	77
Number of participants	% Women participants	No. of policies reviewed	No. of policy briefs produced	No. of recommen-dations produced

This publication aims to reflect on the key lessons learned from the trainings, dialogues and early-stage UPA pilots, present a set of general recommendations to enhance the integration of the food systems approach into UPA policies and initiatives, and advocate for stronger multi-level collaboration to enable local governments to effectively support UPA implementation on the ground.

Ten lessons for a more systemic approach to UPA

This section highlights key insights from the four training sessions and multi-stakeholder dialogues previously mentioned, outlining critical factors to consider for effectively applying the food systems approach in the design of UPA policies and interventions.



1. Consider the multiple benefits of UPA rather than single entry points...

Harnessing the multiple benefits of UPA requires adopting context-specific approaches that maximise its contributions as a **nature-based solution**[1] to food security, climate resilience, economic empowerment, and social equity. Circular and regenerative practices, coupled with fair access for producers and consumers, enhance UPA's potential to:

- Improve **food and nutrition** security, and the affordability of fresh food, particularly for women-led households and underserved populations.
- Mitigate and adapt to **climate change** by capturing carbon and lowering the need for transport, cooling, storage, and thus preventing food losses.
- Enhance **biodiversity** via the increased presence of pollinators, and combat urban heat islands and flooding thanks to the maintenance of ecosystem services.
- Promote mental and physical **well-being** through community building, greening of cities, stress reduction, and healthy lifestyles.
- Create **economic opportunities**, especially local job creation for underserved populations.
- Strengthen the **resilience** of local food systems by diversifying food supply chains, supporting self-sufficiency, strengthening local community networks, and fostering inclusive business networks for urban farmers.
- Promote the **democratisation** of access to healthy and agroecological food by de-elitising and de-nichifying their consumption for communities living in food deserts.
- Uphold **social equity** by preserving agrobiodiversity and traditional knowledge, enhancing food literacy, strengthening social cohesion, and encouraging strong local food cultures (IRP, 2022a).

2. ... But beware of potential trade-offs

The International Resource Panel's 2022 Think Piece on Urban Agriculture's Potential to Advance Multiple Sustainability Goals highlights five key trade-offs to consider when supporting UPA. These include: the use of water in water-stressed regions; the risk of mosquito proliferation in agricultural urban areas; potential chemical spillovers that could pollute water, air, and soil, with adverse effects on public health; competition for land between UPA and other profitable uses; and the balance between UPA's long-term benefits (e.g., climate adaptation, food security, resilience) and short-term gains (e.g., revenue from land sales). The trade-offs and benefits of UPA vary greatly depending on the type of agriculture practised and the specific setting —whether in backyard gardens, community gardens, high-tech environments, allotments, or open fields. Therefore, decisions to promote specific forms of UPA should be guided by local priorities, opportunities, and a thorough analysis of the potential trade-offs involved, while ensuring that those affected are involved in the decision-making process.



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In Hanoi's Ha Dong district, a pilot project to promote UPA revealed significant challenges for vegetable production, primarily due to severe pollution in the Nhue River, which contaminated irrigation water. Farmers were forced to rely solely on well water, leading to higher production costs, lower crop yields, and reduced quality, ultimately threatening the sustainability of their farming activities. To address this, Rikolto and UNEP collaborated with Hanoi's Sub-Department of Plantation and Plant Protection, the Ha Dong Agricultural Service Centre, and two community vegetable production groups to develop a plan to renovate a natural pond for rainwater storage, ensuring a safer and more sustainable water source for vegetable cultivation.

3. Sustainability must be integrated in the design of UPA initiatives and policies from the start

In light of the abovementioned trade-offs, incorporating a systems approach into the design of UPA initiatives and policies can help to maximise its sustainability benefits while minimising associated risks. If not practised sustainably, UPA can lead to conflict and environmental challenges such as soil and water contamination, air pollution, and the spread of invasive species which can impact food safety and public health. Conversely, poor urban air, water, and soil quality can contaminate produce, while inadequate farming practices exacerbate these risks. For example, the use of untreated wastewater for irrigation—often a necessity in water-stressed urban areas—poses significant health risks from pathogen contamination, though reclaiming wastewater sustainably can offset its costs in many locations. Health risks also extend to farmers and consumers, with exposure to pollutants, pesticide poisoning, and diseases linked to stagnant water affecting vulnerable groups, particularly women. Furthermore, economic pressures, such as the high cost of urban land and insecure land tenure, can discourage farmers from adopting sustainable practices, pushing them to prioritise short-term, less diverse production and exploitative farming practices to maximise profits before a potential eviction.

Promoting **circular economy** principles within UPA systems can address several of these challenges. Circular approaches emphasise minimising waste, recycling organic matter into high-value fertiliser, and reclaiming resources such as rainwater and wastewater. These measures not only enhance resource efficiency but also support resilience against disruptions. Secure land tenure, robust guidelines and support mechanisms for regenerative agriculture, and innovative waste management strategies—such as vermicomposting and biogas production—are important components of this transition. Addressing these risks and opportunities systematically can position UPA as a cornerstone of a more circular and sustainable food system.



Promoting circularity in UPA management in Surakarta

The city of Surakarta is enhancing circularity in urban and peri-urban agriculture through a **collaborative organic waste management system**. Partnering with Alila, one of the city's largest hotels, the city government distributes the hotel's food waste to maggot producers, whose maggots are used as animal feed for ducks and fish or sold to other farmers. Residual waste from maggot production is returned to the hotel as fertiliser for its urban farm. This model, initiated by Rikolto and Gita Pertiwi and originally piloted at Taman Winasis, a demonstration plot managed by Surakarta City's Food Security and Agriculture Department, has expanded to involve the regional hospital, a public market and a school, processing 45.8 tonnes of waste and generating IDR 50 million in sales (approximately 3,000 USD). Knowledge sharing is fostered through the Champion Forum, connecting farmers across the region.



4. Cities are not islands: considering rural-urban linkages is key

Circularity in UPA also strengthens rural-urban connections by integrating urban waste into regional nutrient cycles, demonstrating the importance of **territorial cooperation** for sustainable development. An analysis of UPA initiatives and policies in Surakarta revealed that the spatial plan for Surakarta City does not allocate any land for urban agriculture and that peri-urban areas with high agricultural potential lie outside the city's municipal boundaries. This underscores the need for collaboration with neighbouring districts to establish food supply links with the hinterland and develop peri-urban agriculture. Municipalities, due to the limited scope of their policy-making authority, often focus their agricultural strategies on urban and peri-urban areas under their control. However, this approach overlooks regional flows of resources, nutrients, people, and finance, which are vital to the success of UPA initiatives. While municipalities play a key role in creating an enabling environment for UPA, effective UPA frameworks must be designed at the level of interconnected territories. This calls for the active involvement of national authorities to incentivise and facilitate policies that recognise and support these broader rural-urban linkages.

5. Putting systems thinking into practice requires multi-stakeholder collaboration...

Systems change requires multi-stakeholder collaboration, as no single organisation or individual can address complex, interconnected issues alone. Bringing together diverse actors from across the system is crucial to enable coordination, generate a common understanding of the context, identify resources, learn collectively, navigate the trade-offs mentioned above, and mainstream UPA across different policy areas (UNEP, UNDP, and FAO, 2023). The first step is often to map and bring the right actors to the table, including those that may not be formally organised. Next, a comprehensive, **participatory food system analysis** is encouraged to build consensus and identify key issues, policies, trade-offs, and system linkages. This process should leverage existing data, include input from non-academic actors, and be supported by user-friendly data display to guide discussions. The third step involves selecting a governance structure for the collaboration, with an emphasis on transparency and legitimacy. Building a shared vision among stakeholders is the next priority, followed by co-creating interventions that focus on leverage points in the system identified in the context analysis. These should address root causes and be tested on a small scale before wider implementation. It is advised to try to maximise synergies with other actors to optimise the use of resources and to monitor progress in order to identify potential feedback loops that can influence success. Finally, ensuring the long-term sustainability of the collaboration requires a clear division of roles, partnerships, a resource mobilisation strategy, community engagement to foster local ownership, and integration into institutional structures, with careful consideration of incentives that will drive long-term success.



The workshop on a food systems approach to UPA policies and governance in Hanoi, Vietnam, 2024.

6. ... But the design and implementation of the multi-stakeholder process must be inclusive

Ensuring inclusivity in the design and implementation of multi-stakeholder processes for UPA requires careful attention to stakeholder engagement. This involves comprehensive **mapping of stakeholders**, understanding the motivations of each participant, and identifying potential barriers to their involvement, with a particular focus on including traditionally excluded or marginalised groups. Special attention should be given to **empowering youth leaders** and advocates. Young people, often underrepresented in UPA, can play a transformative role if their involvement is nurtured. By emphasising UPA's value proposition, such as its potential for innovation, skill development, and social impact, it can attract younger generations and offer them compelling career pathways. This can create a more dynamic and forward-looking UPA sector, contributing to its long-term sustainability. In Surakarta, young people from diverse backgrounds (farmer groups, school organisations, village and city-level children's forums, and student organisations) are actively contributing to UPA through various activities, participating in study visits, champions' forums, and policy discussions, and launching new initiatives. Examples include the development of circular economy practices such as maggot farming and eco-enzyme production, the launch of the "tebus murah" programme to provide agricultural produce at an affordable price, and collaboration with urban and peri-urban farmer groups to distribute and transport their produce, an initiative supported by the Provincial Food Security Office. Furthermore, women, who play a central role in small-scale agriculture, processing, and marketing, must be supported through policies that recognise their contributions and promote their empowerment. For instance, a project in Ha Dong District, implemented by Rikolto and Hanoi SDPP, and supported by UNEP, and involving 75% women, is providing evidence of how sustainable UPA can create attractive economic opportunities for older adults struggling to find work.

> *Most farmers involved in this model are older adults, with the majority being women who face challenges in securing stable employment. By improving the connection between production and markets, this model provides stable jobs and decent incomes, offering vital support to older farmers, especially women.*
>
> *Mrs. Oanh Le, Deputy Head of the Plantation and Plant Protection Office, Hanoi SDPP.*



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The workshop on a food systems approach to UPA policies and governance in Surakarta, Indonesia, 2024.

7. Limited awareness of existing UPA policies hampers their implementation

The success of UPA initiatives is often influenced by stakeholders' understanding and adherence to regulations and policies established by authorities, as well as their ability to leverage potential incentives. Raising awareness about existing UPA policies among all actors—including farmers, policymakers, and the general public—is crucial to ensuring that UPA activities are conducted within legal frameworks that support sustainable practices and community well-being. In Arusha and Kampala, for instance, there is a lack of awareness about specific bylaws and regulations related to urban planning and UPA. This gap can lead to non-compliance and missed opportunities for scaling up UPA. Investment in targeted awareness campaigns is essential to inform stakeholders about UPA-related regulations and guidelines and can foster a shared understanding of how and where UPA can take place, reduce conflicts, and promote orderly urban development. Additionally, integrating UPA education into school curricula is a key step in preparing future generations to contribute to sustainable urban food systems.



The approach of engaging model farmers within the wards to showcase UPA practices represents an innovative strategy to raise awareness and encourage the adoption of sustainable UPA techniques. These model farmers will inspire local communities and provide hands-on demonstrations of the benefits and feasibility of UPA. Successful implementation of this pilot has the potential to drive changes around UPA in Arusha as well as to influence the city to foster an enabling environment for UPA integration into urban planning through bylaws and regulations that are UPA friendly. Additionally, the pilot creates pathways for collaboration between farmers, policymakers, and other stakeholders, further embedding UPA into the urban food system of Arusha.

Dr. Onesmo Mandike, City Agriculture and Livestock Officer, Arusha City Council



8. Stronger policy incentives are needed for sustainable UPA

Governments' approach to UPA management should move beyond solely imposing penalties on practitioners that do not respect regulations and instead focus on incentivising UPA activities. Offering incentives such as subsidies, tax breaks, payment for ecosystem services or access to resources and infrastructure can encourage more individuals and organisations to engage in UPA. These incentives not only enhance the **economic viability of UPA** but can also promote sustainable agricultural practices that benefit both the environment and community health. For instance, Kampala Capital City Authority (KCCA), UNEP, and Rikolto collaborated to train 50 model farmers to introduce innovative, space-saving urban farming technologies in five Kampala neighbourhoods. For example, a farmer in the south of the city can now visit a local model farmer to see a vermiculture system in action and discuss its benefits and challenges. This significantly reduces the time and cost barriers of travelling to the KCCA resource centre in the city's north.

9. Evidence-based decision-making is the way to go

Data-driven, evidence-based decision-making is essential for the successful implementation of UPA policies. Local and context-specific data helps build a shared understanding of the issues at hand, enabling stakeholders to move beyond biased discussions and anticipate potential negative impacts. Gathering this data supports several key objectives, including assessing UPA's environmental impacts, improving resource efficiency, and formulating responsive policies that avoid unintended harm to the environment and public health. Incorporating both theoretical and empirical evidence into decision-making, while also considering context-specific traditional knowledge, and lived experiences, is crucial. Research institutions and universities are important partners in gathering and providing data, offering technical expertise, and driving innovation, as is the case in Vietnam where participants underscored their critical role in promoting sustainable UPA. A transdisciplinary approach that includes natural and social sciences to assess risks and trade-offs while applying a precautionary approach is particularly valuable. It is important to note that the process through which evidence is debated is as important as the evidence itself. In addition, the development of an **evaluation framework** to assess the economic, social, and environmental effectiveness of UPA is important to ensure accountability and enable continuous improvement. In recognition of this need, the City of Surakarta has prioritised the strengthening of its multi-stakeholder platform, the Food Smart City Committee. In 2024, the city initiated the development of indicators for its Food Smart City Roadmap, including specific indicators for urban and peri-urban agriculture. This process integrates inputs from neighbouring districts—Sragen, Klaten, Boyolali, Karanganyar, Sukoharjo, and Wonogiri—particularly on food supply dimensions, thereby ensuring a regional perspective that supports the transition towards agglomeration-level policies. To facilitate this work, the Surakarta Planning and Development Agency have allocated dedicated funding to support the initiative.



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Group discussions among the participants on UPA facilitated by Hanoi DPP and Rikolto staff.

10. Multi-level governance is essential to create an enabling environment for UPA

Local governments do not operate in isolation; they depend on national and regional authorities to establish an enabling environment for urban and peri-urban agriculture (UPA). These higher levels of governance shape the competencies, resources, and mandates that municipalities require to act effectively. They also play a critical role in translating international commitments—such as Nationally Determined Contributions (NDCs) under the Paris Agreement or National Pathways emerging from the UN Food Systems Summit—into policies that can be implemented at the local level. For example, Tanzania's National Pathway explicitly highlights the role of UPA in advancing equitable livelihoods and strengthening resilience (United Republic of Tanzania, 2022). However, in the absence of clear guidance and effective dissemination at the municipal level, implementation remains challenging. Similarly, Indonesia's national policy frameworks, including the National Action Plan for Food and Nutrition 2021–2024 and its National Pathway (Government of Indonesia, 2021a; 2021b), acknowledge elements of UPA—such as home gardens—but stop short of integrating them into coherent, actionable strategies for urban and peri-urban areas that move beyond anecdotal initiatives. In Vietnam, the 2023 National Action Plan on Food Systems Transformation (NAP) (Government of Vietnam, 2023) adopts a food systems approach but does not explicitly address the critical role of urban and peri-urban areas in this transformation, thereby overlooking the potential of UPA as a driver of local action.

Participants in the multi-stakeholder dialogue in Hanoi emphasised that recognising UPA in policies and development planning at all levels—local, regional, and national—could significantly catalyse its growth. Such recognition would 1) create a supportive environment that offers legitimacy, stability, and incentives for farmers and investors; 2) improve access to resources such as land, water, and funding essential for UPA development; and 3) encourage collaboration among stakeholders such as government agencies, research institutions, and farmers, leading to more impactful initiatives. Formalising UPA within national frameworks—such as land-use laws, development plans, national pathways, and spatial planning—can secure resources, attract investment, and promote inter-regional cooperation. It also helps align policies across governance levels, ensure UPA's inclusion in strategic planning systems, and mandates local governments to incorporate UPA into their food strategies, fostering a more integrated and sustainable food system.

Key recommendations for integrating a systems approach into sustainable UPA

The policy analyses conducted in Arusha, Hanoi, Kampala and Surakarta have identified common gaps that can hinder the development of UPA at the local level. These gaps can be broadly categorised as follows:

- **General mentions without specific provisions:** UPA is broadly referenced, but specific policies lack concrete strategies, targets, and actionable plans for urban and peri-urban settings. Integration into national development plans, urban planning policies, and food systems pathways remains anecdotal.
- **Limited mandate to act locally:** National agricultural or food policies and pathways have not been formally enacted or translated into official local regulations, hindering implementation. Municipalities are not provided with a specific mandate or clear guidance to support UPA effectively.
- **Sectoral silos:** UPA is addressed through single sectoral lenses (e.g. nutrition, production, or food security) without considering its broader benefits or potential trade-offs between outcome areas.
- **Outdated or inadequate policies:** Some local ordinances are outdated and act as deterrents rather than enablers. These policies may fail to address emerging challenges, such as climate adaptation, environmental sustainability, or resource circularity. Furthermore, they tend to rely on punitive measures rather than offering incentives to encourage innovation and participation.
- **Limited community and stakeholder engagement:** Policies lack explicit provisions for community participation in UPA decision-making and fail to allocate resources for awareness-raising of the general public and capacity building of key stakeholders.
- **Lack of a territorial vision and coordination:** Local strategies frequently concentrate on urban areas while neglecting peri-urban zones and the importance of regional cooperation. This results in weak coordination mechanisms between municipalities, regions, and national agencies, hindering effective policy alignment and the integration of broader food system strategies.
- **Weak monitoring and evaluation:** There are no robust frameworks to monitor and evaluate UPA's integration into urban planning or its socio-economic and environmental impacts.
- **Land for UPA is scarcely included in local planning:** Municipal master plans do not allocate land for urban agriculture or provide mechanisms for managing agricultural areas within urban zones.
- **Limited enforcement of UPA regulations and policies:** Enforcement of regulations is hindered by insufficient financial and technical resources, outdated legal frameworks, and a lack of awareness among current administrations of existing regulations.

In response to the identified gaps, a series of tailored, place-based recommendations were developed and discussed during the multi-stakeholder dialogues held in the four cities. These dialogues culminated in the creation of specific policy briefs for each city. While many recommendations are context- and policy-specific, several overarching recommendations have broader applicability. These are directed towards national-level actors, such as Ministries of Agriculture, Offices of the Prime Minister, National Assemblies, and Ministries of Development Planning, as well as local-level authorities such as Municipal Councils and local Departments of Agriculture and Planning. Taken together, the recommendations below attempt to integrate the key messages and lessons discussed above.

> *Historically, urban and peri-urban areas operated in isolation, but there is now increasing recognition of the importance of networking. While initial conversations focused on technical aspects, they have since evolved to encompass broader topics, including regenerative agriculture technologies, circular economy approaches, and market innovations such as healthy food bazaars and champion forums.*
>
> *Titik Eka Sasanti, Director of Gita Pertiwi Foundation, Surakarta.*

National level recommendations

- Facilitate **cross-sectoral coordination**, particularly between agriculture, health, nutrition, finance, environment and urban development ministries on food systems and UPA policy development.
- Foster the integration of **UPA into national development plans and policies**, including socio-economic strategies, national pathways for food system transformation, and ensure appropriate budget allocation. Ensure that these plans outline a clear division of roles and responsibilities for food policy and UPA development between different levels of governance and establish a clear mandate for local government authorities to take action.
- **Mainstream the food system approach and include UPA in sectoral policies** such as agriculture development strategies, food and nutrition policies, NDCs, national biodiversity strategies and action plans (NBSAPs), and other sectoral plans and policies.
- Revise **land-related laws** and urban spatial planning policies to formally recognise and secure land for UPA.
- Include the voices of **urban and local representatives** in the design and implementation of food systems transformation and policies impacting UPA at the national level, for example, through regular multi-level food policy dialogues, to understand challenges and needs and identify opportunities for collaboration and alignment.
- Provide **technical guidance and capacity-building** support to help local authorities translate national policies into actionable plans, including provisions for land allocation, water management, access to markets, environmental sustainability and access to finance.
- Promote **integrated development approaches** that recognise the interdependence between urban and rural areas, use UPA to strengthen food value chains, improve market access for smallholder farmers, and promote sustainable urbanisation.
- Develop a **comprehensive national monitoring and evaluation framework** that can be customised by local authorities to assess the impact of UPA across multiple dimensions. This framework should incorporate specific indicators to measure the performance of UPA practices in areas such as socio-economic development, nutrition, resilience, and environmental sustainability. Additionally, it should provide clear guidance for reporting and decision-making processes, enabling policies and practices to be adjusted based on locally relevant evidence and practical, on-the-ground realities.

Subnational level recommendations

- Consider the creation of a **multi-stakeholder food policy council** or another policy coordination forum at the city region level, with a mandate to work on UPA in a systemic way. Map key UPA stakeholders in the city region, including those from surrounding areas and from various sectors. Encourage the participation of young people, marginalised groups, local communities and urban farmers by organising meetings in spaces that feel safe for them, using appropriate language, supporting participation costs, and demonstrating a clear value added to their participation.
- Conduct a participatory **city-region food system assessment** to establish a database of urban and peri-urban agricultural activities, understand current and future food needs and identify potential food sources for the city. Consider developing tools such as a food system dashboard to identify and address gaps in the city-region food system.
- Co-create with key stakeholders a **municipal or regional UPA roadmap** in line with national policies, including a compelling long-term vision for UPA, key milestones, implementation strategies, and evaluation criteria. Mobilise the multi-stakeholder food policy council to generate a common understanding of UPA challenges and opportunities in the city region based on the assessment and provide policy recommendations. Strengthen inter-regional cooperation by involving stakeholders from different levels of government.
- Translate national policies into **local agriculture development plans, food and nutrition plans**, and local land use plans, as relevant. Establish

clear criteria for the designation of land earmarked for urban agriculture.

- Facilitate **secure land tenure** arrangements, access to resources (e.g. sustainable inputs such as fertiliser, biopesticides, locally adapted seeds) and support services (water, soil testing, etc.) for UPA practitioners.
- Develop policies to stimulate **public and private investment in UPA** through subsidies and incentives to facilitate the provision of necessary infrastructure, facilities, and technologies to support UPA development, including mechanisation, greenhouses, and cold storage; stimulate local innovations and research on UPA crop production (e.g., fertiliser, pest control, supply-demand dynamics); and encourage knowledge sharing on sustainable UPA practices.
- Increase **awareness** among municipal officials, policymakers, and the public about the benefits of UPA. Collaborate with knowledge partners and NGOs to deliver targeted **training in systems thinking** and integrated approaches to UPA for local government officials and stakeholders.
- Stimulate **short supply chains** and **logistical linkages** between urban and peri-urban producers and consumers by promoting market access for UPA products through food procurements (e.g., school meals), traditional food markets, producers' markets, and direct sales. Under the right conditions, these alternatives have the potential to reduce transportation-related emissions, promote local, seasonal, and sustainable products, and provide fresher produce at lower costs by reducing intermediaries, leading to less food loss and waste. Additionally, these spaces can serve as platforms for awareness-raising and education, fostering stronger consumer connections to food origins and promoting healthy diets.
- Create specific guidelines for UPA and integrate them into existing **agricultural extension systems**. Build a **knowledge and policy platform** to support UPA by engaging research organisations and practitioners to gather evidence on its benefits, address knowledge gaps, and develop context-specific integrated UPA practices.
- Develop **monitoring and evaluation mechanisms** with criteria to assess the effectiveness and impact of UPA on multiple sustainable development outcomes, including economic, social, and environmental spheres. Provide training to designated officers on legal frameworks, best practices, and monitoring systems specific to UPA.
- Join **national and international networks of local governments** committed to developing inclusive, resilient, safe, and diverse urban food systems such as the Milan Urban Food Policy Pact to share good practices, get exposed to new ideas and innovations, and contribute to global discussions on the role of local food systems and UPA in advancing the Sustainable Development Goals.

Key resources to facilitate a systems approach to UPA

Interested in integrating a systems approach into sustainable urban and peri-urban agriculture? The resources below can help you get started:

- Policy brief series on integrating a systems approach into UPA in Arusha, Hanoi, Kampala, and Surakarta
- Generic training presentation on integrating a systems approach into UPA
- The One Planet Network Knowledge Hub on the Sustainable Food Systems Approach
- Glossary: 'Towards a common understanding of Sustainable Food Systems: Key approaches, concepts and terms' (OPN SFSP, 2020)
- Rethinking our food systems: A guide for multi-stakeholder collaboration (UNEP, FAO, UNDP, 2023)
- Facilitating multi-stakeholder partnerships: a toolkit (Rikolto, 2022)

Conclusion

While UPA cannot address all urban challenges on its own, recognising its untapped potential is essential for advancing the Sustainable Development Goals (IRP, 2021). An integrated, systems-based approach to sustainable urban and peri-urban agriculture can improve coordination among stakeholders, unlock resources, and address regulatory, institutional, awareness, capacities, technological, and infrastructural gaps. By fostering multi-level and multi-sectoral policy coherence, governments can create an ecosystem of support for UPA that can deliver technical guidance, infrastructure, financial support, resources (land, water, inputs) and clear policy frameworks. Embracing this integrated approach will enable sustainable urban and peri-urban agriculture to contribute to nutrition, socio-economic development, resilience, and environmental sustainability, thereby contributing to more resilient, sustainable, and inclusive food systems for the future.

The One Planet Network SFSP Community of Practice on the Food Systems Approach on the Ground (CoP-FSAG)

The Community of Practice on the Food Systems Approach on the Ground (CoP-FSAG), facilitated by UNEP, connects institutions promoting a food systems approach to achieve sustainable food systems at city and country levels. Operating under the One Planet Network Sustainable Food Systems Programme (OPN SFSP), its members include UN agencies, city networks, civil society, governments, and research institutes. The CoP-FSAG aims to address challenges in applying a food systems approach by translating theory into practice and support the upscaling of good practices. Activities include webinars to share knowledge and inspiration, capacity-building initiatives, technical reports, and guidance documents. Members also collaborate in global events to advocate for the integration of food systems approaches into policies and programmes at local and national levels. By leveraging members' expertise, the CoP-FSAG strives to foster innovative governance mechanisms and supports the practical implementation of holistic solutions for sustainable food systems.



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Bibliography

FAO, Rikolto, and RUAF. (2022). *Urban and peri-urban agriculture sourcebook: From production to food systems*. https://doi.org/10.4060/cb9722en

Government of Indonesia. (2021a). *Indonesia strategic national pathway for food systems transformation.* United Nations Food Systems Summit Dialogues. https://summitdialogues.org/wp-content/uploads/2021/09/Pathway_version_1.0english_Indonesia_15.09.2021.pdf

Government of Indonesia (2021b). Keputusan Menteri Perencanaan Pembangunan Nasional/ Kepala Badan Perencanaan Pembangunan Nasional Nomor KEP 124/M.PPN/HK/10/2021 Tentang Penetapan Rencana Aksi Nasional Pangan dan Gizi Tahun 2021-2024. https://scalingupnutrition.org/sites/default/files/2022-06/national-nutrition-plan-indonesia.pdf

Government of Uganda. (2021). *Uganda food systems transformation pathways.* https://www.unfoodsystemshub.org/docs/unfoodsystemslibraries/national-pathways/uganda/2021-09-15-en-pathway-to-the-food-systems-updated-150921.docx

Government of Vietnam. (2023). *Unofficial Translation of Decision No. 300/QD-TTg: Approving the national action plan to transform the food systems towards transparency, responsibility, and sustainability in Vietnam by 2030*. Socialist Republic of Vietnam. https://gain.fas.usda.gov/Download.aspx?p=2053&q=6df58c94-5e96-4528-a523-15e611e0bea2

Intergovernmental Panel on Climate Change (IPCC). (2019). *Chapter 5: Food security. In Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems.* https://www.ipcc.ch/srccl/chapter/chapter-5/

International Resource Panel (2022a): *Urban agriculture's potential to advance multiple sustainability goals: Think Piece*. Nairobi: United Nations Environment Programme. https://www.resourcepanel.org/file/2735/download?token=MVC8CARF

International Resource Panel (2022b). *Urban Agriculture's Potential to Advance Multiple Sustainability Goals: Policy Guidance from the International Resource Panel*. Nairobi: United Nations Environment Programme. https://www.resourcepanel.org/reports/urban-agricultures-potential-advance-multiple-sustainability-goals

Ministry of Construction (MoC) (2020). Mô hình phát triển nông nghiệp đô thị - Kinh nghiệm tại một số đô thị Việt Nam / Model of urban agricultural development - Experience in some urban areas in Vietnam. https://moc.gov.vn/tl/Pages/chitiettin.aspx?IDNews=63247&tieude=mo-hinh-phat-trien-nong-nghiep-do-thi---kinh-nghiem-tai-mot-so-do-thi-viet-nam.aspx

Rikolto (2022). Policy Brief: Integrating a food systems approach in Kampala's urban and peri-urban agriculture policies and practices. https://wedocs.unep.org/items/98a32826-35b1-4ff5-92a9-4b5ef9d75366

Rikolto (2024). Policy Brief: Integrating a Food Systems Approach into Urban and Peri-Urban Agriculture Practices and Policies in Arusha, Tanzania. https://wedocs.unep.org/items/c286db5e-3b43-4812-b67b-18f89b6a5e11

Rikolto (2024). Policy Brief: Integrating a Food Systems Approach into Urban and Peri-Urban Agriculture Practices and Policies in Hanoi, Vietnam. https://wedocs.unep.org/items/104a575c-beac-40dc-8590-ad9f2ba63ae4

Rikolto (2024). Policy Brief: Integrating a Food Systems Approach into Urban and Peri-Urban Agriculture Practices and Policies in Surakarta, Indonesia. https://wedocs.unep.org/items/4ab5dee5-c3b8-4c04-9e51-69b04ea38933

UNEP, FAO, UNDP (2023). Rethinking our food systems: A guide for multi-stakeholder collaboration. Nairobi, Rome and New York. https://doi.org/10.4060/cc6325en

United Republic of Tanzania. (2022). *National roadmap to sustainable food systems transformation by 2030*. United Nations Tanzania. https://tanzania.un.org/sites/default/files/2022-04/URT%20ROAD%20MAP%20REPORT%20FINAL%201%20April%203%202022.pdf

Colophon

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