

**Driving policy change
towards sustainable urban
food systems:
Upscaling Urban and Peri-
urban Agriculture in Brazil**

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ISBN: 978-92-807-4178-0

Job number: DEP/2666/NA

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Citation

United Nations Environment Programme (2024). *Driving policy change towards sustainable urban food systems: upscaling Urban and Peri-urban Agriculture in Brazil*. Nairobi



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I. INTRODUCTION

In 2020, 800 million people worldwide were affected by hunger - a number that had increased by 118 million since 2019, the Covid-19 pandemic being a major contributing factor (Food and Agriculture Organization [FAO] 2023). Globally, 31.9% of women and 27.6% of men experienced moderate to severe food insecurity, highlighting an increase in gender disparity (FAO 2023). In Latin America and the Caribbean, 6.5% of the population experiences periods of insufficient food, going a day or more without enough to eat. This issue, along with rising rates of obesity and extreme climate events, has created a global syndemic. This syndemic, intertwined with various impacts on ecosystems and biodiversity, presents a pressing challenge that necessitates rethinking the future of food systems (Willet 2019).

Cities consume 80% of the world's energy production and generate nearly the same percentage of greenhouse gases (World Bank 2010). With projections estimating a global population of 9 billion by 2050, with 68% living in urban areas (United Nations Department of Economic and Social Affairs [UN-DESA] 2018), rethinking food systems becomes crucial. The challenge lies in finding ways to feed a growing urban population amidst food insecurity without exacerbating the negative impacts on our planet.

In 2022, Brazil faced a paradox: despite being one of the world's largest agricultural exporters, 33 million Brazilians, or 15.5% of the population, were unsure if they would have enough to eat each day (Brazilian Research Network on Food and Nutrition Sovereignty and Security [PENSSAN] 2022). Reflecting a broader trend in Latin America, 85% of Brazil's population lives in urban areas, with the majority of those experiencing food and nutritional insecurity residing in the peripheries and favelas of large cities (27.4 million people). Hunger in Brazil is also linked to race and gender. During the COVID-19 pandemic, households headed by women saw an 8.1% increase in hunger and households headed by black people saw an increase in 7.7%, compared to a 4.9% increase in households headed by men who do not identify as black. This disparity is largely due to income and other inequalities. Brazil returned to the Hunger Map in 2022, alongside an alarming rise in overweight and chronic non-communicable diseases related to diet, such as diabetes and hypertension (Nilson 2022). Historically, Brazil has been at the forefront of developing solutions for feeding its growing cities based on agroecological practices and short supply chains. Since the 2000's, the country has seen a surge in Urban and Peri-urban Agriculture (UPA) programs, supported by public authorities (Santandreu and Lovo 2007). This national level support ranges from providing public land,



resources, tools, scholarships, and marketing structures to institutional strengthening through legislative and regulatory frameworks. More recently, a survey across 67 cities highlighted that this agenda became rooted at municipal level with a varied suite of public policies and collaborations with civil society and social movements (Center for Sustainability of Fundação Getúlio Vargas [FGVces] and The Economy of Nature and Biodiversity [TEEB] 2023). These solutions are implemented in various forms, including urban farms, residential and community gardens, urban agroforestry, productive yards, edible gardens, agroecological public squares, cultivation under energy transmission lines, and remnants of former green belts (FGVces and TEEB 2022). Urban and peri-urban agriculture (UPA) has garnered attention as a Nature-Based Solution [1] to address food security, environmental challenges, and income generation. Recognized by the International Resource Panel, UPA has the potential to mitigate

urban heat islands, improve water quality and availability, reduce greenhouse gas emissions, and ensure food and nutrition security (International Resource Panel [IRP] 2022). While the potential of UPA to provide environmental, social, and economic benefits is widely recognized, there are still gaps in understanding how this activity can be better integrated into land use planning to promote circularity, resilience, biodiversity conservation, social inclusion, and healthy diets. Recognizing this knowledge gap, TEEBAgriFood Brazil aims to inform decision-making processes by assessing and developing pathways for scaling up sustainable agriculture within and around cities. To bridge this gap, it is crucial to identify and analyze the impacts of UPA on natural, human, social, and produced capitals, as well as on ecosystem services throughout the UPA value chain, and to project future scenarios for policy interventions.



An urban farming plot runs along the powerlines in Sao Paolo

©FGV/Felipe Abreu

1. Nature-based solutions are "actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits" (UNEP/EA.5/Res.5)

II. BACKGROUND

The TEEBAgriFood project began with an initial study conducted in the São Paulo Metropolis [2], which provided valuable evidence on the potential of sustainable UPA to supply fresh, healthy food while enhancing ecosystem services, such as heat and flood mitigation, and improving well-being especially among vulnerable populations (Escolhas 2021). This study set the stage for further exploration of UPA's potential, leading to the second major publication [3] which focused on identifying various policy upscaling instruments at city level (FGVces and TEEB 2022). This publication addressed a demand from federal and municipal managers on how to better integrate agriculture into the urban planning process [4].

Building on these findings, the Brazilian government relaunched the National Programme for Urban and Peri-urban Agriculture in 2023 (decree 11.700/2023). Later, this program was integrated into a broader National Strategy for Food Security in Cities (decree 11.822/2023), becoming the primary government initiative to boost food production across 50 municipalities. Both the National Programme [5] and the Strategy established the 'Guide for UPA Agendas' [6] as the main reference for multi-level governance (municipal, state and federal) for upscaling sustainable UPA policies.

TEEBAgriFood Brazil played a pivotal role in the programme's development, fostering collaboration among four Ministries, providing a foundation of scientific evidence on UPA benefits, advocating for gender equality, encouraging active social participation, and proposing pathways to evaluate UPA as a nature-based solution for cities. The UPA National Programme incorporates the guide's six major policy recommendations for states and cities [7]. Additionally, this policy change introduces an innovative aspect by considering urban farmers as beneficiaries in payment for ecosystem services programs, a topic that will require further regulation. This comprehensive approach offers

2. <https://alemdosalimentos.escolhas.org/>

3. <https://eaesp.fgv.br/centros/centro-estudos-sustentabilidade/projetos/guia-para-agendas-municipais-agricultura-urbana-e-periurbana>

4. This second publication was coordinated by UNEP/TEEBAgriFood in partnership with the Ministry of Social Development and carried out by the research partner, the Center for Sustainability Studies of Getulio Vargas Foundation (FGVCES). During the process, this initiative received contributions and guidance from the Steering and Technical Committee, which includes several stakeholders from civil society, research groups, municipalities, states and federal governments. Additionally, over 100 contributions were incorporated in the final document throughout the period of public consultation.

5. As evidence of TEEBAgriFood's impact on public policies, Article 11 of the Decree establishes as the foundational reference for states, districts, cities, and civil society to integrate and execute their UPA actions the guidelines for urban planners to integrate Urban and Peri-urban Agriculture (UPA) in their planning and decision-making.

6. https://eaesp.fgv.br/sites/eaesp.fgv.br/files/u641/fgvces_-_agendas_municipais_de_agricultura_urbana_e_periurban.pdf

7. In the Policy Recommendations topic, "solution A" details these six steps.



significant potential for addressing the challenges of urbanization while promoting sustainability and well-being in Brazilian cities. Despite the new National Programme, many cities and states still lack the necessary information to develop an integrated UPA agenda. This gap may be due to a lack of awareness about what other regions are doing in this policy area and its impact on territories, or due to a shortage of resources, planning tools, and knowledge of potential funding sources.

Therefore, a national level survey was carried out to gather information from 67 cities to inform the UPA National Programme. This survey aimed to identify the range of public actions for upscaling UPA and to highlight common challenges and bottlenecks shared among municipalities. Some key findings are presented in the next section, leading to policy recommendations for improved synergy between different levels of decision-making.



Donna Terezinha and her husband run a community garden that provides organic fruits and vegetables to city dwellers

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III Facts and Figures

80
tons

UPA programs across Brazil are currently producing up to 80 tons of food per year (FGVces and TEEB 2022). In São Paulo metropolis, projections point to the potential for supplying its 21 million inhabitants with fresh fruits and vegetables produced inside the metropolitan perimeter, generating approximately 180,000 jobs (Escolhas and Urbem 2020).

75 %

75% of cities with UPA programs and actions support agroecological practices and systems. This shows a preference for more nature based-solutions over intensive monocultures. (FGVces and TEEB 2022).

700
hectares
across
39 cities

Across 39 cities within the metropolis of São Paulo, approximately 700 hectares of organic urban farms could ensure access to healthy and fresh food for vulnerable populations living in food deserts (Escolhas 2021). However, major UPA programs support, on average, a total area of 50 hectares, highlighting the need for upscaling (FGVces and TEEB 2022).

Countering
soil sealing

The tendency in growing cities is to increase soil sealing and, consequently, a greater probability of floods. Agroecological practices enhance water infiltration in soils, having an effect at landscape level equivalent to the volume of three flood control pools, saving significant costs for public administration (Escolhas 2021).

56%
women

Significant women's participation was verified among the 13 typologies of UPA studies in various cities and regions of the country, with at least 56% of people engaged in and leading these initiatives being women.

0.2 degrees
temperature
decrease

With heat waves becoming more frequent, the application of UPA has the potential to decrease temperatures by 0.2 degrees Celsius in some cities, avoiding acclimatization costs and increasing labor productivity (Escolhas 2021).

IV Policy Recommendations

The close collaboration between decision makers, UNEP and research partners in Brazil created a two-way exchange between science and policy, fostering a better understanding of UPA's role in driving significant transformations in food systems. UPA extends beyond food production because it can catalyze sustainable transitions in consumption habits and patterns, influencing the market and other stages of the food system, including rural landscapes, to adopt new methods of production, distribution, commercialization, and waste management. Based on the previously cited evidence, the following policy recommendations explore synergies from enhanced multi-level governance between the public sector and civil society to institutionally scale up UPA and boost initiatives on the ground.

Solution A (city level): Six Steps for integrated and robust UPA Agendas

Cities may lack the necessary information to develop UPA agendas in a systematic and integrated manner. Two interdependent aspects are crucial in shaping public action: (1) scaling out, which involves supporting the proliferation of initiatives across the territory by expanding both the area covered and the number of participants involved; and (2) scaling up, which involves strengthening institutionalization through the establishment of a legal framework, integration into urban planning processes, and diversification of funding sources. Focusing on institutionalization without tangible initiatives can result in UPA being merely a concept on paper, while expanding initiatives without institutional support may lead to fluctuations across political cycles. Therefore, decision makers should consider this interdependency and plan for gradual improvements to better integrate these aspects. The following six steps for integrating the agenda are highly recommended:

1. **Map UPA participation in the Territory:** Identify and mobilize strategic actors, ensuring broad participation from civil society and public sectors.
2. **Define Objectives and Prioritize Benefits:** Set clear objectives and prioritize the strategic benefits of UPA based on the actual needs of the community.
3. **Characterize UPA Spatially:** Map the various UPA typologies within the territory to identify those that should be encouraged or transitioned to more sustainable practices.
4. **Develop and Implement Policy Instruments:** Create and apply policy instruments to strengthen municipal UPA agendas, both institutionally and by multiplying initiatives.
5. **Allocate or Establish an Administrative Body:** Designate an administrative body to manage the municipal UPA agenda, involving different public sectors, civil society, the private sector, social movements, and academia.
6. **Monitor and Communicate Results:** Track and report the outcomes of the UPA agenda for accountability to the public, using a mix of qualitative and quantitative metrics.

Solution B (city-federal interface): Better collaboration between federal and municipal levels.

The mapping of UPA agendas across cities has revealed a diversity of instruments and strategic actions, influenced by factors such as ecosystem and cultural characteristics, city size, administrative capacity, and collaborations with civil society. To address these specificities, three levels of agenda maturity were proposed [8] to categorize cities at similar stages (initial, intermediate, and advanced) and facing similar challenges in upscaling UPA. By considering these levels of maturity, federal and state governments can provide tailored support, as summarized below:

Cities at the initial Level: At this stage, municipal managers find it challenging to establish UPA as a strategic agenda for cities and may lack clarity on developing a legal framework for it. The federal government can provide a legislative proposal template, based on successful municipal laws across the country and promote peer-to-peer learning. Ideally, this legal framework should encompass all dimensions of UPA benefits, anticipate an intersectoral participative governance structure that includes civil society, and ensure access to land, clean water, and agricultural inputs to strengthen existing initiatives and encourage new ones.

Cities at Intermediate Level: At this stage, it is crucial to promote agroecological principles and practices to establish UPA as a nature-based solution for major urban challenges such as food insecurity, increasing urbanization, climate change, and income generation. Federal and municipal governments can collaborate on capacity-building strategies for farmers, public managers, and community leaders. This collaboration aims to enhance their ability to influence urban planning processes (including master plans, multi-year planning, and participatory budgeting) and to improve fundraising efforts.

Cities at Advanced Level: At this stage, the challenge is to develop a Municipal UPA Plan that unites the efforts of various public sectors and civil society. By organizing priority actions and setting achievable goals, this plan can better influence urban planning and allocate public budgets from diverse sources (public, private and international). Successful cases and peer-to-peer learning

8. The levels of maturity were reviewed and validated by the cross-sectoral Steering and Technical Committee.

can provide valuable insights for this process. Municipalities should ensure intersectoral and participatory governance in developing and implementing this plan. Additionally, in collaboration with the federal government, they should establish agreements with research institutions to assist in monitoring and evaluating the benefits of UPA for society.

Solution C (federal level): from Programme to UPA National Policy

With the relaunch of the UPA National Programme, the efforts from the federal government, states, and municipalities should be coordinated to create synergies and complement each other in strengthening the agenda. Establishing a federative pact could provide incentives and compensations across different administrative levels, aiming for a gradual and continuous enhancement of legal frameworks and the consistent expansion of UPA initiatives.

At the same time, it is important to recognize that this institutional setup based on a federal decree is susceptible to changes in political cycles. It is thus essential to establish a National UPA Policy through legislative action, thereby putting in place a long-term policy. This National Policy should be developed in close collaboration with civil society and social movements, ensuring broad social participation and oversight. It should also be informed by lessons learned from the UPA National Programme.



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Terezinha says the garden does not only provide fresh and organic food - it also brings people together as a community

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Acknowledgements

The TEEBAgriFood Brazil team extends heartfelt gratitude to the myriad ministries, civil society organizations, research entities, policymakers, committees and dedicated individuals who have played a pivotal role in the development and strengthening of urban and peri-urban agriculture across Brazil. Your collective efforts and unwavering commitment have been instrumental in advancing this agenda.

Special thanks to peer-reviewers: Kelliane Fuscaldi (Coordinator of Urban and Peri-urban Agriculture Programme, Ministry of Social Development); Andre Biazoti (National Group of Urban Agriculture – National Agroecology Articulation); Carmen T. Ledezma (Sustainable Food Systems Expert, Energy and Climate Branch – UNEP) and Ana Coelho (Coordinator at Center for Sustainability Studies of Getulio Vargas Foundation – FGVCES).

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