



## European Union - Brazil Dialogue on Sustainable Urban Food Systems

### RESEARCH REPORT - SUMMARY

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# SUMMARY

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# 1. INTRODUCTION AND PRESENTATION OF THE PROJECT

Food systems are very vulnerable to disruptions due to conflict, climate change and economic crises, factors that are adding to social inequality and food inflation to form the “new normal” of the drivers of food insecurity and malnutrition (FAO, IFAD, UNICEF, WFP and WHO, 2023). In this challenging scenario, in which the ability to offer healthy, safe and accessible food to all is constantly tested, transforming food systems demands multistakeholder action (Bernardi and Bertello, 2022) and an active participation of cities (Wensing, Cremades and van Leeuwen, 2023).

Implementing circular urban food systems is also an opportunity to replace the linear model of production, consumption, and disposal with the maximum use of food via, for example, redistribution of surpluses, use of organic waste for composting, design of social food initiatives and fostering entrepreneurship with social impact in the food sector. These are some of the assumptions behind this project and which are also advocated by Ellen MacArthur Foundation (2019).

The environmental and social costs of the linear food production and consumption model is linked to a “business as usual” view but should not be an option faced as we need to optimise scarce natural resources (Pimbert, 2015). A priority for the European Union is to strengthen the circularity of food systems, as highlighted by the European Green Deal and European research and innovation policy FOOD2030 (European Commission, 2023), which highlights “circularity and resource efficiency” among its four priority areas. The other three areas are “healthy nutrition and diets”; “climate and environment”; and “innovation and empowerment of communities”. Against this background, regional interactions and partnerships are critical facilitators for transforming food systems (European Commission, 2022).

The interconnection of Sustainable Development Goals (SDGs) 1 (No Poverty), 2 (Zero Hunger) and 12 (Responsible Production and Consumption), for example, with SDG 11 (Sustainable Cities and Community), added to the imperative of accelerating the fight against the global syndemic of obesity, malnutrition and climate change (Swinburn et al, 2019), has led the United Nations to advocate the end of the rural-urban divide in the planning of food security and nutrition initiatives (FSN). Public policies, programmes and investments should instead be guided by an understanding of how the rural-urban continuum and food systems interact (FAO, IFAD, UNICEF, WFP and WHO, 2023).

Embrapa, to strengthen its action in line with global trends and to meet the European Union (EU) call for partnerships aligned with the UN's Sustainable Development Goals, recently led two projects as part of the European Union-Brazil Dialogues on mitigating food waste, in which nationwide quantitative research on food waste in households was carried out. Several educational activities for students and teachers were also organised in different Brazilian states, including a science fair for several hundred students at Embrapa's headquarters, with the participation of the Delegation of the European Union to Brazil, WWF Brazil and the Instituto Mauricio de Sousa. More recently, representatives of Embrapa and the EU were involved in the implementation of the Milan Pact in Latin America and in discussions during the UN Food Systems Summit on sustainable food production and consumption, held in 2021.

The **"Cities and Food: Governance and Good Practices to Leverage Circular Urban Food Systems"** project, led by Embrapa Food and Territories in partnership with the Delegation of the European Union to Brazil, is building on the progress already achieved and moving forward by focusing on the role of cities to boost the circularity of food systems. This initiative aims at fostering the exchange of experiences of the Brazilian cities of Curitiba (Paraná), Maricá (Rio de Janeiro), Recife (Pernambuco), Rio Branco (Acre) and Santarém (Pará), all participants in the Lab on Urban Food Policies (LUPPA), led by the Comida do Amanhã Institute in partnership with ICLEI South America, with the European cities engaged in urban food programmes and policies.

## As the project's first activity, in partnership with LUPPA, a webinar on "Food Waste and the Role of Cities" was held in January 2023.

<https://www.youtube.com/watch?v=c5W5WEzuwbY>

The project aims to use the experience of LUPPA to strengthen activities already under way, to scale through cooperation and knowledge exchanges. It also intends to be a model for encouraging more cities to initiate action plans to strengthen urban food agendas with a special focus on the implementation of circular food systems. The urban food agenda means "policies, programmes and initiatives developed and implemented by national and sub-national governments, jointly with different stakeholders from the public and private sectors, to enhance food security and nutrition and sustainable development in urban areas and rural areas under their influence" (FAO, 2020).

Cities and their inhabitants, as highlighted by the European Commission (2023, p.6), represent a force for change in achieving sustainable food systems, "especially in terms of choices about public food purchases, management of food loss and waste, design of urban food environments and in terms of consumer behaviour and people's relationship with food and food culture".

Cities can be real epicentres of positive change in encouraging more sustainable food production and consumption, given that almost 80% of all food produced in the world is consumed in urban areas (EAT, 2022),

and approximately 75% of European Union (EU) citizens live in cities, towns or suburbs (Eurostat, 2022), and in Brazil, 61% of the population lives in urban areas (IBGE, 2023). The great demand for food is generated in cities. This is why it is crucial to invest in changing eating habits and raising people's awareness, and in building healthy and sustainable food environments. Increasing urbanisation presents both challenges and opportunities in ensuring access to healthy food (FAO, IFAD, UNICEF, WFP and WHO, 2023).

FAO, IFAD, UNICEF, WFP and WHO (SOFI 2023) highlight, among the challenges, the abundant availability of processed, convenient, and low-cost foods containing high levels of fat, sugars and/or salt, which encourages the consumption of nutrient-poor foods. The agencies additionally highlight the insufficient supply of fruit and vegetables to guarantee the nutritional requirements of healthy diets for the entire population, and the exclusion of family farmers from formal productive chains, as well as the loss of land and natural capital due to urban expansion.

Urbanisation, on the other hand, also results in longer and more complex food supply chains that expand income-generating activities in jobs outside agriculture, especially for women and young people, which increase the variety of nutritious foods. According to FAO, IFAD, UNICEF, WFP and WHO (2023), farmers generally get better access to agricultural inputs and services as urban areas approach rural areas. In addition, lessons from this project based on the successful experiences in cities such as Valencia (Spain), Maricá and Curitiba (Brazil), for example, shows that the rural-urban connection can be fostered through the production of food on urban allotments and farms and support for production in peri-urban areas and metropolitan regions. There also exists the possibility of aligning municipal programmes with the desire of urban consumers to consume organic food, as the cities of Recife (Brazil) and Ghent (Belgium) do in their municipal programmes. Cities also provide opportunities to connect industries, supply centres and retailers with food banks, as well as the possibilities of enhancing food kitchens, social food initiatives and community restaurants, as we have seen in Rio Branco (Brazil). They also improve food and nutritional education in schools, using holistic and interdisciplinary strategies, as in the city of Santarém (Brazil).

Lastly, the challenge of bringing more small farmers into the market can be encouraged by food purchasing programmes or by putting locally produced food on school food menus, as is the case in Santarém and Valencia. Robust initiatives to promote short production and consumption circuits also serve this purpose, as noted in the "Km 0" strategy implemented in Turin.

The circularity of food systems, the most widely discussed issue in the EU, is the next step for cities that are starting to acknowledge the true value of food. As Wensing, Cremades and van Leeuwen (2023) suggest, the first step can be to engage and give an opportunity for people to adopt sustainable consumption behaviours through, for example, Communities Supporting Agriculture (CSA) programmes and other chain shortening practices. Governments should also promote and implement circular economy initiatives, including through public procurement of sustainable products. The authors also stress the need for tax benefits to encourage sustainable waste management practices and the development of co-products from what is discarded. Finally, cities need to foster new collaborations and experimentation between different actors to encourage social networks, circular business models and innovative lifestyles (Wensing, Cremades and van Leeuwen, 2023). These must follow the logic of the urban and social innovation laboratories (City labs) that are fostered, for example, through projects aligned with the Food 2030 strategy (European Commission, 2023).

One lesson among the main lessons learned by the Food 2030 initiative (European Commission, 2023, p. 49) is particularly in line with Brazilian cases. That lesson is the need for “food to be seen in connection with climate, community and circularity and to be incorporated into a systemic approach” to explore the full potential of food to generate environmental, economic and social benefits.

In short, the topic of ‘cities and food’ is a portent of the future and is in line both with global challenges and with the strategic areas of European Union-Brazil cooperation, such as climate change, food security and nutrition, and the circular economy. “If we fail in food, we will fail in everything” (European Commission, 2023, p. 49).

## Methodology

The selection process of cities took into account the regional diversity of the municipalities and the engagement in the Lab on Urban Food Policies (LUPPA) programme. A call was made to cities over 150 000 inhabitants, out of more than 30 cities participating in LUPPA, to apply for one of the five vacancies on the project. Cities responded to the call by means of an electronic form describing initiatives in line with sustainable urban food systems run by the municipality and partners. They also explained their motivation for participating in the project and presented a letter of commitment from the mayor or mayoress. The choice of the five cities, carried out by representatives of Embrapa, the European Union Delegation in Brazil, Comida de Amanhã Institute and ICLEI South America, took into account an analysis of the information sent. Another criterion was to guarantee the participation of three municipalities from the North and/or Northeast of Brazil, regions with lower income rates.

On the European side, the selection process considered engagement in initiatives such as the Milan Pact for Urban Food Policy and the Food Trails project. The involvement of cities in programmes that have links with Brazilian initiatives was also considered, such as school gardens, urban farms, food banks, initiatives to connect local rural producers with consumers, and others aligned with the circular food economy.

A schedule of visits to Brazilian cities was organised after the city selection stage, to collect data on activities to promote sustainable urban food systems run or promoted by the municipalities. The case study involved in-depth interviews with municipal managers using a semi-structured plan (annex) and on-site observations during field trips. The interviews were recorded, transcribed and the data analysed in conjunction with the field notes. The aim of the study is to identify good practices, the main causes of success, bottlenecks and analyse the governance of public policies in each city for the urban food agenda. We consider governance, for the purposes of this study, to be the set of rules, norms, spaces for consultation and dialogue, and attitudes that maintain and control the policies of the food system, as well as the interactions and power relations between the institutions involved in the urban food agenda. Food policy is governed through the structures necessary to guide the interactions between the actors involved and their main activities (Carvalho, Más-Rosa e Ventura, 2022).

In addition to data on urban food programmes and policies, the project carried out gravimetric analysis of organic waste at street markets in Curitiba, Recife and Rio Branco. These cities were selected from the group of five cities first selected because they had at least four weekly street markets, that is, fresh food markets taking place in four different areas, lasting up to three consecutive days.

Gravimetric analysis, using a methodology validated in Brazil by the Swedish Environmental Protection Agency (SEPA), was coordinated by the Brazilian Association of Public Cleaning and Special Waste Companies (Abrelpe), an institution with experience in waste analysis and participation in Brazil-Sweden cooperation in sustainable solid waste management. The gravimetric analysis described in this report makes it possible to quantify food waste and to categorise the waste most discarded.

A technical mission to Europe was also planned and carried out in June 2023, to foster interaction between Brazilian and European cities. The series of actions, which also involves online seminars with cities for sharing initiatives and an in-person international seminar, strengthens the urban food agenda in the cities involved, encourages more cities to implement initiatives and opens opportunities up for future cooperation. The key messages obtained from the data collected in each of the five Brazilian cities studied, and an executive summary of the case studies and gravimetric analyses, are provided below.



## 2. KEY MESSAGES

- Cities can be the epicentre for changes aimed at accelerating the transformation of food systems through the implementation of cross-sectoral urban food programmes and policies.
- Setting up a technical team and keeping its skills up to date, is the initial step for cities to start planning urban food policies. Having technicians with decision-making powers is crucial for the continuation of food programmes and policies.
- The leadership of the urban food agenda should be well-designed and preferably involve a planning board with the participation of different municipal secretariats and permanent consultation with civil society and the private sector through food policy councils.
- Planning food policies must be carried out by means of multi-year strategies, established through participatory policy making processes, to set out local priorities, goals and ambitions in a coherent manner, through actions correlated with municipal budgets.
- A systemic view all the way from the farm to fork, with analyses of trade-offs resulting from the implementation of public policies, is crucial so that the initiatives involve different players in the food production chain, and they achieve the desired results.
- Implementing public food security facilities should preferably involve a multiplicity of initiatives for mutual action in the fight against hunger, addressing food waste and generating income for the most vulnerable people through, for example, food banks, community restaurants, food kitchens and other social food initiatives with NGO partners.
- The public authorities can be a facilitator of social retail, a trend observed in several countries with interesting initiatives in Brazil, such as the “Armazem da Família” (Family Supermarket) and the “Sacolão da Família” (Family Fruit and Vegetables Shop) programmes in Curitiba, and the “Caminhão do Peixe” (Fish Truck) in Maricá. Social supermarkets do not need to be run by public authorities but may be managed by public-private partnerships.
- Food systems are complex and face challenges such as hunger, all forms of malnutrition and food waste. Expanding access to market for smallholder farmers requires actions from different actors. Cities can also be real innovation laboratories in terms of implementing new organisational arrangements that involve, for example, quasi-public entities, retail, academia and science & technology institutions to jointly accelerate the solutions for the needed transformation.
- Food distribution in cities, whether by means of street markets, supermarkets, supply centres or municipal markets, is a great generator of organic waste. It is essential to implement action plans to reduce waste and alternatively to make use of food waste for composting and producing biogas, for example.

- Street markets in cities like Curitiba and Recife generate, by themselves, thousands of tons of organic waste per year. Since part of the waste may be considered avoidable food waste, the implementation of “urban waste collections” may be an alternative to avoid the unnecessary disposal of food that is still safe for consumption.
- The high levels of food waste in retail, as observed in Rio Branco, favours the implementation of arrangements that connect retailers’ associations with food banks as a way of reducing retail costs by redirecting organic waste, helping to fight hunger and reduce waste. Food donations must have criteria that guarantee the safety of the food donated and favour the collection of food stocks of nutritional value.
- Community restaurants cannot be seen as merely an extension of welfare policy. When well implemented, in airy and well-lit spaces that convey well-being, they can go beyond their mission of offering healthy food to the most vulnerable people and be transformed into places of social interaction for the elderly and immigrants, for example, or areas for skills development and training, as observed in the cities of Rio Branco, Santarém, Curitiba and Maricá.
- Encouraging agroecological production, as seen in Recife, is a way for public authorities to act in alignment with the demand of urban consumers for a healthier diet. Agroecology brings producers closer to consumers, generates income within city peripheries, and encourages the connection of agriculture with health and nutrition.
- Although cities can take the lead in regulating and promoting their food systems so that they foster health for their inhabitants, harmony with the environment and a positive impact on the climate, there is a need for relationships and coordination with the state and federal levels of government, which can and should also support the formation of circular urban food systems. In addition to the important roles of funding activities and encouraging the development of institutions and legal frameworks at the local level, a typically common topic on the three-party agenda of responsibility is the management and sharing of data, especially with regard to the data from Food and Security National System, Health National System, Social Welfare National System, the School National Census, etc. The same attention should be given to the need to share and manage data internally in each municipality, enabling systems managed by separate municipal secretariats to support each other.
- Cities need to improve the quality management of public food security facilities, and also act in the quality management area focusing food safety at street and municipal markets, for example. Rules, such as the one established by the city of Curitiba for the sale of meat at street and public markets exclusively from refrigerated shelving, need to be implemented by other cities.

### 3. EXECUTIVE SUMMARY

Cities can be the epicentre for changes aimed at accelerating the transformation of food systems through the implementation of cross-sectoral urban food programmes and policies.

Food systems are very vulnerable to disruptions due to conflict, climate change, and economic crises, factors that are adding to social inequality and food inflation to form the “new normal” of the drivers of food insecurity and malnutrition (FAO, IFAD, UNICEF, WFP and WHO, 2023). In this challenging scenario, in which the ability to offer healthy, safe and accessible food to all is constantly tested, transforming food systems demands multistakeholder action (Bernardi and Bertello, 2022) and the active participation of cities (Wensing, Cremades and van Leeuwen, 2023).

Implementing circular urban food systems is also an opportunity to replace the linear model of production, consumption and disposal with the maximum use of food via, for example, redistribution of surpluses, use of organic waste for composting, design of social food initiatives and fostering entrepreneurship with social impact in the area of food. These are some of the assumptions behind this project and which are also advocated by the Ellen MacArthur Foundation (2019).

The learning from this project, based on the successful experiences in cities such as Valencia (Spain), Maricá and Curitiba, for example, shows that the rural-urban connection can be fostered through the production of food in urban allotments and farms and support for production in peri-urban areas and metropolitan regions. There are also possibilities of aligning municipal programmes with the desire of urban consumers to consume organic food, as the cities of Recife and Ghent (Belgium) do in their municipal programmes.

Cities also provide opportunities to connect industries, supply centres and retailers with food banks, as well as the possibilities of enhancing food kitchens, social food initiatives and community restaurants, as we have seen in Rio Branco. Food and nutritional education need to be strengthened in schools, using holistic and interdisciplinary strategies, like in Santarém.

## Case study

The cities and food project selected five Brazilian cities (Curitiba, Maricá, Recife, Rio Branco and Santarém), all participants in the Lab on Urban Food Policies (LUPPA) programme to conduct a case study of their programmes, actions and public policies aimed at strengthening circular food systems. In Curitiba, Recife and Rio Branco, a gravimetric analysis of the organic waste from city street markets was carried out to measure food waste.

The choice of the five cities by the representatives of Embrapa, the European Union Delegation in Brazil, Comida do Amanhã Institute and ICLEI South America, took into account an analysis of the information sent. Another criterion was to guarantee the participation of three municipalities from the North and/or Northeast regions.

Opportunities were identified to expand the development of the food system in each city after conducting interviews and collecting data from the relevant municipalities, and technical visits to the public facilities and food policy units in each city:

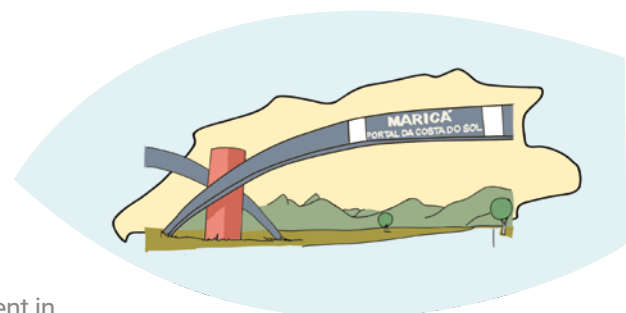
### CURITIBA:

- Work more with Brazilian quasi-public entities and partners in projects to foster innovation, for innovative solutions and programme modernisation that foster income generation, new businesses - such as the “Armazém da Família (Family Supermarket), street and public markets - and urban agriculture - such as city farms, allotments and beehives.
- Expand the capacity for composting waste from street markets and direct it, for example, to school recycling bins or gardens.
- Increase the connection of some programmes, identifying opportunities for strengthening the circular economy, such as supplying the Food Bank with items from the “Armazém da Família” (Family Supermarket) and “Sacolão da Família” (Family Fruit and Vegetables Shop) programmes, and linking “Troca Verde” (Green Exchange) Programme with other municipal public facilities.
- Promote the Municipal Market and other markets through campaigns that encourage the population to visit these spaces, besides the possibility of developing a more robust communication strategy to strengthen the market brand.



### MARICÁ:

- Approval of the Legal Framework of Agroecology, under debate in the Legislative Chamber, and of the 1st Municipal Food Strategy, as a result of the interest of the current government in developing laws/regulations linked to the topic of food security and nutrition.



- Use of the food and nutrition security survey that is ongoing in the municipality to strengthen the strategies and activities of “CAISAN” (Interministerial Panel on Food and Nutrition Security).
- Expansion of the training sessions provided by the municipality at the “Sábado Agroecológico” (Agroecological Saturday) event for training and awareness-raising amongst the population.
- Encourage and strengthen local producers and the local fishing community by making space available for selling their products in the Municipal Market.
- Creation of a municipal law to make organic compost plants available and implementation of educational gardens, supported by State Law No. 9.897, of 10 November 2022, which stipulates that, within 24 months, schools within the municipal system should make organic compost bins available for the reuse of leftovers from school lunches.
- Expansion of the municipal composting project in the light of the commitments given by adherence to the Milan Pact and compliance with the Municipal Law No 2.946 of 13 August 2020, which lays down principles, guidelines, objectives and instruments for the integrated solid waste management plan in the municipality of Maricá.
- Strengthen nutritional education and awareness on food waste in public schools through campaigns, extra class activities or even via municipal projects and/or programmes for this purpose.
- Obtain funds via parliamentary amendments, partnerships and public notices to promote sustainable projects for the acquisition of containers for composting in agro-ecological squares, the creation of a composting courtyard with greater capacity and the development of studies to measure food waste.

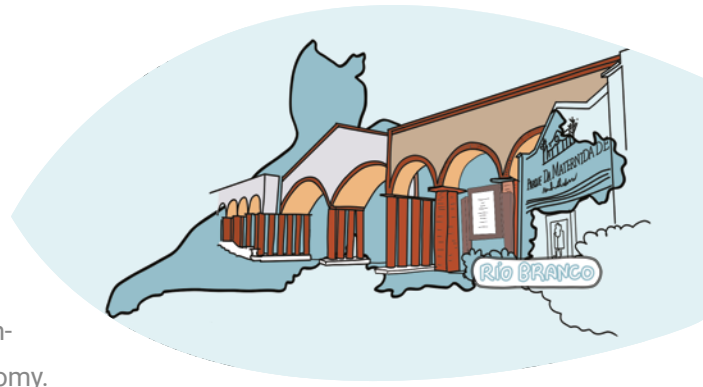
## RECIFE:

- Development of partnership between the municipality and the quasi-public entity responsible for Social Service of Commerce Chamber (“SESC”) and other partners (e.g. social movements and local NGOs) to start urban waste collection at the indoor and street markets of Recife with the aim of reducing fruit and vegetable waste and directing the surplus to the food bank run by SESC, for example. SESC food bank does not work with urban waste collection in Recife, because the vehicles are already being used to collect waste from retail and industry.
- The gravimetric analysis carried out was the first local experience of calculating and categorising the waste from street and indoor markets, which aroused the interest of the Secretariat for Urban Policy and Licensing (SEAU) to start a programme. The Secretariat, through the Recife Urban Services Company (CSURB), could improve the management of waste from street and indoor markets.
- The theme of agroecology is known in the city due to the actions of SEAU. In this context, the zones of the 65 agroecological street markets in the city could be used to carry out activities related to food and environmental education, to raise awareness and engage the population.
- Highlight the issue of food within the various startups promoted in the city of Recife, a state capital with a history of initiatives relating to entrepreneurship and innovation.



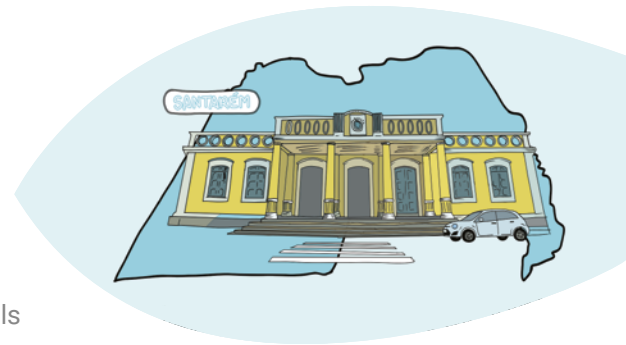
## RIO BRANCO:

- Expand composting using the waste from street markets for use in school and urban allotments.
- Increase the connection of some programmes by identifying opportunities for strengthening the circular economy.
- Encourage an increase in donations from public state warehouse and, mainly, from retailers to the municipal food bank, given the high levels of waste observed at UTRE, by means of joint partnerships and awareness-raising.
- Work more with partners, such as Embrapa and “Sebrae” (a Brazilian quasi-public entity to support small entrepreneurs), in projects to foster innovation, both for new solutions and for modernising programmes that foster urban agriculture, income generation and new business, such as encouraging the occupation of the public state warehouse (“CEASA”) by family farmers.



## SANTARÉM:

- Raise awareness among local retailers about the donation of food and establishing partnerships with supermarket associations and with SESC to expand the urban collection of food that would be discarded or not, given the findings of high levels of waste in the municipality. SESC has great potential to be a partner in this action and in the implementation of a food bank in the municipality.
- Expansion of composting in the City Park, with the organic waste from indoor and street markets and the Federal University of Pará, which normally go to landfill, and its donation to local producers and/or school gardens.
- Establishment of a partnership with Sebrae to strengthen small agro industries linked to cooperatives, to offer food products showcasing local biodiversity.
- Invest in public markets design and create specific spaces for the sale of the products from the small agro industries of Santarém and nearby cities, an important initiative for local tourism and income generation.
- Expand public purchases from family farms for the University Restaurant.
- Investment in the transportation system and food logistics to reduce costs, losses and waste, including refrigerated fleets and subsidies for local family producers.



## Gravimetric analysis

The food trade in cities, whether at street markets, supermarket chains or municipal markets, generates a considerable amount of organic waste, which can be reused as input for agricultural purposes or more innovative solutions can be introduced to find new uses for the waste.

**Curitiba:** unavoidable waste is the most common, mainly coconut, which accounts for almost 35% of the total waste found at all street markets. As for avoidable waste, a considerable amount of tomatoes and oranges was noted, which were the most frequent foods found at all street markets. Considering the 180 street market stalls included in the study, an average of 16.4 kg/stall was collected, with 2.9 kg/stall of avoidable waste and 9.7 kg/stall of unavoidable waste. The total annual generation of waste from street markets in the city of Curitiba was estimated at 869 tons. This is an opportunity for Curitiba to expand the composting of waste from street markets for use on urban allotments.

**Recife:** avoidable waste is the most common, mainly tomatoes, which accounted for almost 12% of the total waste found at all street markets, i.e., 126 kg. 92 kg of tomatoes were collected at the Santa Rita market alone, and on only one day. As for the unavoidable waste, a considerable presence of peel was noted in general, at almost 254 kg. An average of 6.13 kg per stall was collected from the 171 street market stalls under study. There was 3.7 kg per stall of avoidable waste and 1.8 kg per stall of unavoidable waste. There are 17 registered street markets in Recife, which take place weekly, with a total of 2,900 stalls. Assuming that all street markets run during the 52 weeks of the year, there are a total of 884 street markets per year, totalling 150,800 stalls. The total annual generation of waste from street markets in the city of Recife was estimated at 924.4 tons. This is an opportunity for Recife to implement an urban collection programme, which should involve the sorting of safe food for consumption and targeting, for example, food banks and/or food kitchens.

**Rio Branco:** gravimetric analysis was carried in Rio Branco out after the floods in 2023, but the street markets had not yet fully resumed. The results showed that unavoidable waste is most present, mainly fruit peel in general. As for avoidable waste, there was variation between street markets and no food was common at all four markets. However, at the Elias Mansour market and the Experimental Station street market, fruit was the most common food found. An average of 3.21 kg per stall was collected from the 90 street market stalls under study, with 0.842 kg per stall of avoidable waste and 1.411 kg per stall of unavoidable waste. The total annual generation of waste from street markets in the city of Rio Branco is estimated at 49 tons. Rio Branco has an extensive composting programme, carried out at the Solid Waste Treatment Unit (UTRE). At this location, a high level of discarded expired food from supermarkets in the region was identified. In 2022,

supermarkets discarded on average 111 tons of food a month at UTRE, most of it being rice, beans, pasta and biscuits. From January to June 2023, the supermarkets of Rio Branco disposed of 458 tons of dry food at the UTRE. The amount discarded at the UTRE does not include FLV (fruit, vegetables and greens) waste.

## Summary of the case study

The cities studied represent distinct territories of Brazil, of different sizes - both in population and in area - with diverse socioeconomic situations, and consequently different demands and opportunities as well. There are also different perceptions about the role of local government (sometimes more interventionist, sometimes more regulatory, sometimes more coordinated), and different administrative management capabilities. They all run very similar programmes, albeit at different stages of development and organisation.

Setting up a technical team and keeping its skills up to date, is the initial step for cities to start planning urban food policies. Having technicians with decision-making powers is crucial for the continuation of food policies.

The implementation of permanent public food programmes and policies, which are seen as state policies, requires technical managers with leadership capacity and continuous training. The “people” axis, which also relates to the number of staff involved in the introduction and implementation of the initiatives, is critical to a robust and efficient urban food agenda.

There is a need for well-defined budgetary resources, legal frameworks and institutionalisation of the programmes to contribute to the continuation of policies. Pilot projects are important, but the public policies regarded as successful are those that have become a “common good” of society, which have “appropriated” the relevant governmental action, and not allowed it be lost with occasional changes in government. This sense of co-creation is what brings legitimacy to government action and leverages the effectiveness of public policy.

The leadership of the urban food agenda should be well-designed, and preferably involve a planning board with the participation of different municipal secretariats and permanent consultation with civil society and the private sector through the food policy councils.

The political will to implement urban food initiatives is aligned with the need for cities to consider the food issue as strategic, and this means the centrality of the food agenda on the political agenda of municipal governments and urban planning. The “intersectoral” axis, also evidenced by the governance model adopted in the cities participating in the project, is equally important. It points to the relevance of networking with the involvement of



different municipal secretariats, multistakeholder arrangements with the participation of civil society, different levels of government, academia and the productive sector.

Social participation can reach an even higher level through ongoing campaigns and dialogues with society in general and with communities of key actors in particular. All this generates engagement and social control over public policies.

Food systems are complex and facing challenges such as hunger and all forms of malnutrition, food waste and the productive inclusion of small rural producers requires multi-stakeholder actions. Cities can also be real innovation laboratories in terms of implementing new organisational arrangements that involve, for example, Brazilian quasi-public entities, retail, academia and science & technology institutions to jointly accelerate the solutions for the necessary transformation.

Planning must be carried out by means of multi-year strategies, established through participatory processes, which set out local priorities, goals and ambitions in a coherent manner, with actions correlated with municipal budgets.

It is just as important at the planning stage of the urban food agenda to identify and outline the policies for resilience (e.g. initiatives and programmes to combat food insecurity and the social benefits of reducing poverty). It is important to define which policies have the potential to transform the food system, and therefore need to be worked on in a very strategic way. Diagnosis and planning should involve identifying the uses of the area and the opportunities that are presented, and in this way outline the entry points for prioritising and leveraging food policies.

The public authorities can be a facilitator of social retail, a trend observed in several countries with interesting initiatives in Brazil, such as the “Armazém da Família” and the “Sacolão da Família” programmes in Curitiba, and the Fish Truck in Maricá. Social supermarkets do not need to be run by public authorities but may be managed by public-private partnerships.

The lessons learned from the project point to the need for the management model to be aligned with the profile and potential of the municipality, to guarantee coherence between the final objectives of each measure or programme.

Identifying multi-level roles and potential is as important as cross-sectoral and agenda management. Good dialogue and coordination with the state and federal levels of government guarantees agility and progress in local initiatives.

Although cities can take the lead in regulating and promoting their food systems so that they foster health for their inhabitants, harmony with the environment and a positive impact on the climate, there is a need for

relationships and coordination with the state and federal levels of government, which can and should also support the design of circular urban food systems.

In addition to the important roles of funding initiatives and encouraging the development of institutions and legal frameworks at the local level, a subject typically to be found on a three-party accountability agenda is that of data management and sharing, especially with respect to data from national systems on food and security, on health and on social welfare, school national census, etc. The same attention should be given to the need for data sharing and management internally in each municipality, enabling systems managed by separate municipal secretariats to support each other.

Efficient management or coordination of data enabling both good preparation and effective evaluation of local food policies is a very important aspect of this coordination between levels of government.

Implementing public food security facilities should preferably involve a multiplicity of initiatives for mutual action in combating hunger, addressing food waste and generating income for the most vulnerable people.

The “multiplicity of public food security facilities” is also an important axis. Food banks, community restaurants, food kitchens and community allotments are the most common initiatives, but there is room to enhance the multifunctionality of these facilities. These initiatives can integrate various aspects of public policy actions, and thereby help to ensure food policy coherence and the exercise of intersectoral management.

Community restaurants cannot be seen as merely an extension of welfare policy. When well implemented, in airy and well-lit spaces that convey well-being, they can go beyond the mission of offering healthy food to the most vulnerable sections of the population and be transformed into places of social interaction for the elderly and immigrants, for example, or areas for skills development and training, as observed in the cities of Rio Branco, Santarém, Curitiba and Maricá.

The “social retail of food” is another important axis, which emerged more strongly in the analysis of data from the cities of Curitiba and Maricá and is also present in the European cities. Providing access to low-cost food, via e.g., “Armazém da Família”, “Sacolão da Família” and “Caminhão do Peixe” programmes are an alternative for cities to alleviate the issue of “food deserts”, regions where people have less access to healthy food.

Cities need to improve the quality management of public food security facilities, and also act in quality management with a focus on the safety of food offered at street and municipal markets, for example. Rules, such as the one established by the city of Curitiba for the sale of meat at street and public markets exclusively from refrigerated shelving, need to be implemented by other cities.

It is essential to implement action plans to reduce food waste, and alternatively to make use of food waste for composting and producing biogas, for example.

Street markets in cities like Curitiba and Recife alone generate hundreds of tons of organic waste per year. Since part of the waste may be considered avoidable food waste, the implementation of “urban waste collections” may be an alternative to avoid the unnecessary disposal of food that is still safe for consumption.

The high levels of food waste in retail, as observed in Rio Branco, favours the implementation of arrangements that connect retailers’ associations with food banks as a way of reducing retail costs by redirecting organic waste, helping to fight hunger and reduce waste. Food donations must have criteria that guarantee the safety of the food donated and favour the collection of food stocks of nutritional value.

A systemic view all the way from farm to fork is crucial for the initiatives to involve different players in the food production chain and to achieve the desired results.

The systemic approach of food must permeate all government initiatives and programmes. A coherent and cross-cutting perspective is needed. For example, the waste generated by a given programme, such as the circuit of farmers markets, can be transformed into input for the school garden programme. In addition, the food bank can be connected with street and indoor markets and traditional retail through “urban waste collections” and encouraging food donations. Even the waste from food banks, community restaurants and schools can gain some kind of use through solutions devised, for example, as innovative challenges.

Achieving circularity also requires a systemic approach, with analyses that involve interactions between the players all the way from the farm to fork and attend to the superstructure of the food systems and all the negative externalities of these sectors. Promoting sustainable local production, for example, is the starting point of the food production chain and can, within the cities, be strengthened by an understanding of the role and potential of public food purchases.

Encouraging agroecological production, as seen in Recife, is a way for public authorities to act in alignment with the demand of urban consumers for healthier diets. Agroecology brings producers closer to consumers, generates income within the city periphery, and encourages the connection of agriculture with health and nutrition.

Monitoring to evaluate and ensure the success of food policies.

Finally, all the programmes and policies implemented need to have well-defined result indicators. The “measurement of impacts” is an important axis for achieving goals that indicate the programme has completed its “pilot” state and became a true local public policy. The monitoring of food policies is a key part of their success.

# SUCCESS FACTORS



## PEOPLE

- Frequent training and qualifications
- Career path
- Technical knowledge
- Multidisciplinary teams
- Adequate quantity

## QUALITY MANAGEMENT

- Guidelines and standards for food street markets
- Focus on food safety

## INTERSECTIONALITY AND SYSTEMIC VIEW OF FOOD

- Interconnection between municipal programs and actions
- Strategic planning
- Policy coherence for food systems
- Diagnostics and management of shared data
- Multifunctionality of the public infrastructure for food security and nutrition

## MULTI-LEVEL AND DEMOCRATIC GOVERNANCE

- Legal frameworks
- Food on the municipal political agenda
- Well-defined budgets
- Social control and participation
- Monitoring and evaluation
- National food and nutritional security system (Sisan)
- Municipal - state - federal dialogue
- Public-private partnerships



Art: Luciana Fernandes / Embrapa Food and Territories



## 4. CONCLUSIONS

The cities studied represent distinct territories of Brazil, with different sizes - both in population and in area - different socioeconomic situations, and consequently distinct demands and opportunities as well. There are also different perceptions about the role of local government (sometimes more interventionist, sometimes more regulatory, sometimes more coordinated), and different administrative management capabilities. However, it can be seen that they all run very similar programmes, albeit at different stages of development and organisation. There are some common denominators that, precisely because they are found in such different settings, are good indicators of the potential that can be identified in almost every Brazilian urban centre.

The analyses of the data collected in the five cities studied show that some factors are crucial for the strengthening of sustainable urban food systems. The implementation of permanent public food programmes and policies, which are seen as state policies, requires technical managers with leadership capacity and continuous training. The “people” axis, which also relates to the number of staff involved in the introduction and implementation of the initiatives, is critical to a robust and efficient urban food agenda.

The political will to implement urban food initiatives is aligned with the need for cities to consider the food issue as strategic, and this means the centrality of the food agenda on the political agenda of municipal governments and urban planning. The “intersectoral” axis, also evidenced by the governance model adopted in the cities participating in the project, is equally important. It points to the relevance of networking with the involvement of different municipal secretariats, multistakeholder arrangements with the participation of civil society, different levels of government, academia and the productive sector. Inter-sectoriality can also be considered to have different levels of implementation, and the participation of civil society through advisory councils is an important initial step.

Social participation can reach an even higher level through ongoing campaigns and dialogues with society in general and with communities of key actors in particular. All this generates engagement and social control over public policies.

There is also a need, as regards the management and implementation of the urban food agenda, for well-defined budgetary resources, legal frameworks and institutionalisation of the programmes to contribute to the continuation of the policies. Pilot projects are important, but the public policies regarded as successful are those that have become a “common good” of society,

which have “appropriated” the relevant governmental action, and not allowed it to be lost with occasional changes in government. This sense of co-creation is what brings legitimacy to government action and leverages the effectiveness of public policy.

It is just as important at the planning stage of the urban food agenda to identify and outline the policies for resilience (e.g., initiatives and programmes to combat food insecurity and the social benefits of reducing poverty). It is important to define which policies have the potential to transform the food system, and therefore need to be worked on in a very strategic way. Diagnosis and planning should involve identifying the uses of the area and the opportunities that are presented, and in this way outline the points of entry for prioritising and leveraging food policies.

We believe that there is no single answer for defining what the role of local government should be in promoting sustainable urban food systems. However, we need to identify possible models for understanding and evaluating the best forms of economic intervention in the food sectors for generating collective benefits and mitigating negative externalities. Municipal governments can implement the main programmes and policies at the local level, but they can also opt for management models in which the local government acts more as a facilitator of initiatives and, in parallel, fosters partnerships and social entrepreneurship. There is also the possibility of outsourcing the operation of FSN facilities or even some food services. The lessons learned from the project point to the need for the management model to be aligned with the profile and potential of the municipality, to guarantee coherence between the final objectives of each measure or programme.

In the area of food policy governance, identifying multi-level roles and potential is as important as cross-sectoral and agenda management. Good dialogue and coordination with the state and federal levels of government guarantees agility and progress in local initiatives, whether in terms of funding, by sharing data, or providing skills development and training. Efficient management or coordination of data enabling both good preparation and effective evaluation of local food policies is a very important aspect of this coordination between levels of government.

The “social retail of food” is another important axis, which emerged more strongly in the analysis of data from the cities of Curitiba and Maricá and is also present in the European cities. Providing access to low-cost food, via e.g., Family Warehouse, Family Shopping Bag and Fish Truck programmes, are an alternative for cities to alleviate the problem of “food deserts”, regions where people have less access to healthy food.

The “multiplicity of public FSN facilities” is also an important axis. Food banks, community restaurants, food kitchens and community allotments are the most common initiatives, but there is room to enhance the multifunctionality of these facilities. These initiatives can integrate various aspects of public policy actions, and thereby help to ensure food policy coherence and the exercise of intersectoral management. The systemic vision of food must permeate all government initiatives and programmes, be they emergency, structural or transformative in nature.



*Art: Luciana Fernandes / Embrapa Food and Territories*

It is also important to map the initiatives and identify connections between them, in order to guarantee the circularity of urban food systems. Once again, we stress the need to look at these initiatives in a coherent and cross-cutting way. For example, the waste generated by a given programme, such as the circuit of farmers markets, can be transformed into input for the school garden programme. In addition, the food bank can be connected with street and indoor markets and traditional retail through “urban waste collections” and encouraging food donations. Even the waste from food banks, community restaurants and schools can gain some kind of use through solutions devised, for example, as innovative challenges.

Achieving circularity also requires a systemic vision, with analyses that involve interactions between the players all the way from the field to the dining table and attend to the superstructure of the food systems and all the negative externalities of these sectors. Promoting sustainable local production, for example, is the starting point of the food production chain and can, within the cities, be strengthened by an understanding of the role and potential of public food purchases.

Finally, all the programmes and policies implemented need to have well-defined result indicators. The “measurement of impacts” is an important axis for achieving goals that indicate that the programme has completed its “pilot” state and become a true local public policy. The monitoring of food policies is a key part of their success.

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