Chapter N 009

Circular urban food policies: the "Food in the circular city" model promoted by the city of Prato

**Abstract.** Urban food policies are highly relevant among the governance policies of a city. By putting food at the centre of a system of relations at a territorial level, it is possible to create an integrated system. Modern urban food policies also incorporate the principles of sustainability and the circular economy.

This paper presents the 'Food in the Circular City' model, developed within the framework of the 'Prato Circular City' strategy, promoted by the Municipality of Prato to accelerate the city's circular transition. This model aims to achieve a balance between supply and demand for agricultural products for the city, which does not necessarily have to achieve self-sufficiency, but rather an integrated and harmonized system of relations between city and countryside that optimizes production to meet real needs in terms of quality and quantity. The affirmation of a circular urban agri-food system and of this integrated vision of food production and consumption also requires access to scientific knowledge, technologies, incentives and financial facilities available to all interested parties. The aim of the 'Food in the Circular City' model is the creation of a short and multifunctional supply chain, constituting an overall design for the enhancement of Prato's agrifood offer.

**Keywords.** circular economy, urban agriculture, urban food policies

# 1. Introduction

Cities, over the centuries, have taken on different structures and functions. Thus, a city can be considered as an ecosystem depending on other territories both to acquire resources needed (i.e. energy, water, etc.) and to dispose of what it has not fully metabolised (Caroli, Magherini, 2015). Regarding the production processes, according to the circular economy principles, the products must be designed and optimised to facilitate disassembly, reuse and recycling, sharing must be promoted, and negative externalities must be identified and eliminated, such as the air, water, and soil pollution” (Giorgi, S. et al., 2017).

Regarding food, cities have left their original function of production to peripheral areas. Nowadays, population growth at the urban level requires the adoption of new policies that favour sustainable solutions for food production. Urban agriculture poses itself as a solution, offering different options, which can be adapted to all contexts and models, and offering various advantages in productive, environmental, economic, and social terms. In recent years, the issue of creating food-based systems is becoming more and more central (Steel, 2020), to counteract the increasing number of people moving to cities and to make these places food-sustainable, aiming for a green transition. This is at the heart of the European Green New Deal[[1]](#footnote-1) and the so-called “Farm to Fork”[[2]](#footnote-2) strategies. The adoption of a circular economy approach in cities should necessarily involve from administrators to productive activities, from associations to citizens. It is desirable that this sharing of intentions translates into concrete actions to promote innovation, regeneration and cohesion as the accelerating factors of the transition into a circular city model (Borsacchi and Pinelli, 2019).

Various examples of food policies already in place include the Milan Food Policy, as a shared vision of the city's future relationship with food, that includes key actions to harmonize the various projects the administration is pursuing on the topic of food (Comune di Milano, 2020), or the newly launched Rome Food Policy (Minotti et al., 2022). In addition, virtuous and sustainable models of urban agriculture have been taking shape within cities for years combining food issues together with environmental and social aspects (i.e. in Paris[[3]](#footnote-3), Berlin, Turin[[4]](#footnote-4)). In recent years, the municipality of Prato has decided to develop an urban agri-food model, putting food at the centre of a system based on sustainability, circularity, and high social impact policies. This paper describes the results of the development of the urban agri-food model of the City of Prato, finally called “Food in the circular city”.

**2. Material and methods**

To develop its urban agri-food model, the municipality of Prato decided to use, at the methodological level, the "Prato Circular City" (PCC) platform[[5]](#footnote-5), which through a participatory process with qualified stakeholders aims to outline policies and actions for the city's circular transition. In 2020, with the launch of PCC, to accelerate the circular transition at the urban level, the city administration of Prato has included sustainable urban agriculture as one of its four priority topics for discussion. Authors have been facilitated the process by coordinating the meetings of PCC. Structured as a living lab, PCC operates to overcome the barriers that slow down the transition to the circular economy. For this reason, PCC focuses on better regulation, better funding, and better knowledge. The living labs work on specific topics, to formulate a hypothesis of action plan (Borsacchi et al., 2021).

On the topic of sustainable urban agriculture, the working group involved the Municipality of Prato, associations of producers, agri-food operators, distributors, and the university in order to discuss food policies, urban agriculture, and food waste reduction. On these issues, the priority was to define policies and to encourage the overcoming of obstacles to promote the consumption of food from short supply chain circuits and contribute to the local urban and peri-urban economy of the area.

**3. Results and discussion**

Within the territory of the province of Prato, although the predominant economic sector is textiles, there is also widespread agricultural production, which we can observe in the areas north and south of the province, especially in Val di Bisenzio and the Montalbano biodistrict. According to official data provided by the Municipality of Prato, the number of active farms in the province is 418, including 162 in Prato and 83 in the municipalities of Val di Bisenzio. The agricultural area is 3600 hectares, a quarter of which is devoted to organic farming. Since 2009, short supply chain market initiatives (e.g. Terra di Prato market) have been widespread in the area, with positive spin-offs for local agricultural producers and the promotion of healthy eating styles based on seasonality and typicality. At the same time, collective brands of agricultural producers with good local recognition are active in the area (e.g., Gran Prato in addition to the aforementioned Terra di Prato). The role played in the past by the Province of Prato in promoting food specialties of the territory has been gradually scaled down due to the depowering of the provinces in Italy. The municipalities of the Province of Prato have therefore launched paths of valorisation, often linked to the enhancement of the territory in terms of tourism.

Starting from the weak points of Prato's urban and peri-urban agrifood sector, which emerged during the living labs, barriers and possible solutions have been outlined. Table 1 summarises the proposed action plan.

Table 1: Problems and possible solution for the creation of the circular and integrated system

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| Problems encountered | Barrier | Action proposed |
| Short-term public procurement for the food supply in public canteens. Promotion of short supply chains. | Better regulation | Public procurement with a duration of more than 3 years to encourage local producers to convert to organic production |
| At the local level, more attention to policies for the textile sector | Better knowledge and better funding | Valorisation of agro-food sector and creation of specific policies to enhance collaboration and awareness |
| Fragmenting farmland | Better knowledge and better funding | Mapping of uncultivated land and the need of funds for land acquisitions |
| Poor generation turnover | Better knowledge and better funding | Approaching young people through the promotion of sustainable, circular agriculture and using digital tools. |
| Agricultural fields run by Chinese | Better knowledge | The growing phenomenon to be better known, including in relation to agricultural practices applied |
| Water scarcity and the possibility of reuse of treated wastewater for agricultural purposes | Better knowledge | Awareness raising |
| Creation of urban gardens | Better knowledge | Active citizenship activities and promotion of healthy and sustainable lifestyles |

Sources: Authors

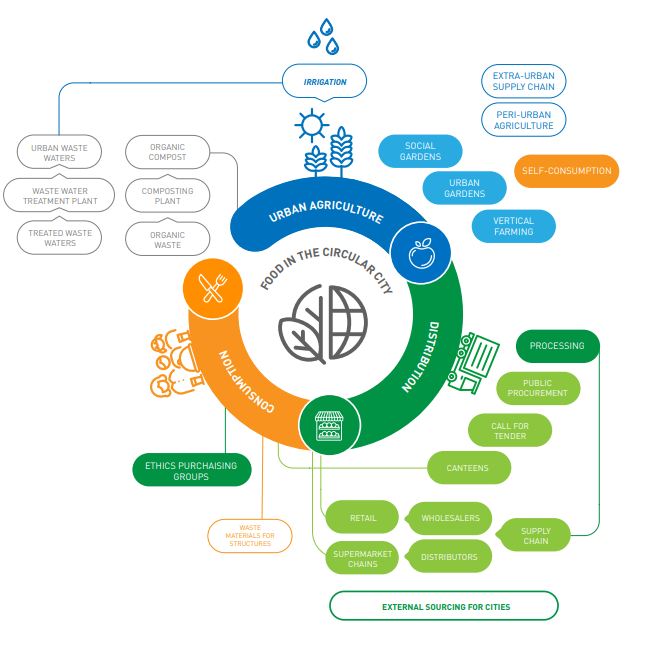
Nowadays, there is a substantial lack of data on agri-food production in the area, which prevents the definition of strategic and systemic policies, both in terms of planning and real needs. Information derived from periodic censuses or data collection carried out by individual associations does not solve the problem. On the front of better regulations, the possibility of relating with policy makers through aggregated forms and business networks could help strengthen the demands presented and favour their acceptance. In fact, agricultural producers expressed the need to have in public procurements a duration of more than 3 years for the supply of agricultural products to school canteens, especially in the case of supplying organic products. They also highlight, for example, the need to be able to obtain long-term concessions, preferably 10 years, for the organization and management of public spaces used as markets. Moreover, on the better financing front, aggregate forms of enterprises can identify suitable financing opportunities on more relevant calls, as well as provide support for network enterprises in preparing individual financing applications.

Starting from the proposed action plan, stakeholders decided to focus on three specific actions in order to push the circular transition in agri-food sector at the local level:

1. Reuse of treated wastewater for agricultural purposes: In Prato, the presence of the urban and industrial wastewater treatment plant (i.e. GIDA), together with recent European legislation on the reuse of treated wastewater, can place the city as a prime location for the study and subsequent use of this water source for irrigation of arable land. The working group aims to bring together agricultural operators, businesses, associations, and water treatment plants to define the feasibility and methods of creating an integrated water system that aims, from a circular economy perspective, to reuse treated wastewater, generating a reduction in the use of water from groundwater or surface water bodies.
2. Short supply chain: The working group intends to promote with targeted actions the concept of proximity inherent in the essence of the "short supply chain" system, thus fitting within the European "Farm to Fork" strategy. This may also fit within recovery and redevelopment projects, with a view to the circular economy of peri-urban areas.
3. Development of urban gardens: The working group intends to deal with raising awareness among citizens about the possibilities of horticultural production, moving from good cultivation practices to promote healthy food lifestyles related to the seasonality and typicality of produce.

Moving from the findings of living labs of PCC, it was developed the model of "Food in the Circular City". This model aims to create a harmonized integrated system of relationships between city and countryside that optimizes production to the real needs in quality and quantity, through the enhancement of networks between food operators along the chain.

Figure 1 shows the model “Food in the circular city”. Based on circular economy principles, the model starts from the urban and peri-urban vegetable garden (which should be private, social, or hydroponic). The use of treated wastewater and bio-compost (from the collection and composting of organic fractions) could be considered as a good circular practice. Agri-food production (i.e. fruits and vegetable) can reach the consumers through three possible routes: i) self-consumption; ii) sales through Solidarity Purchasing Groups (SPG); iii) processing: from this stage, they move towards marketing within the large-scale retail trade or retail sale, or, they can be included in supply specifications and public procurement. Following these three routes, the products will be consumed, resulting in waste, which, as mentioned earlier, will be collected and taken to the composting plant from which the compost used in the production of fruit and vegetables can be obtained.

Fig. 1. “Food in the circular city”

Source: Authors (English version from the original Italian version included in “Next Generation Prato” p.62 <https://www.pratocircularcity.it/minisiti/prato-circular-city/documentazione-tavoli/media7259.php>)

# 5. Conclusions and future perspectives

The model of "Food in the Circular City," aims to achieve a balance point between supply and demand of agricultural products for the city of Prato. Establishing a circular urban agricultural system and this integrated vision of food production and consumption also requires access to scientific knowledge, technologies, incentives, and financial facilities available to all stakeholders. For this, adequate resources will be needed to promote the enhancement of networks between agricultural producers, processing and marketing companies, catering, and tourist accommodation with the aim of creating short and typical supply chains in an overall design of enhancing Prato's agrifood supply. In the continuation of the activities of Prato Circular City, listening, collaboration and full involvement with the various stakeholders will be essential to achieve the objectives set.

**References**

Borsacchi, L., Pinelli, P., Tacconi, D. (2021). "Prato Circular City": an integrated strategy to accelerate the circular urban transition through innovation, regeneration, cohesion. In: Proceedings of the 27th Annual Conference, Internations Sustainable Development Research Society. Accelerating the progress towards the 2030 SDGs in times of crisis. p. 719-729, Mid Sweden University, Östersund, Sweden, ISBN: 978-91-89341-17-3

Borsacchi, L., Pinelli, P. (2019). Sustainable and innovative practices of small and medium-sized enterprises in the water and waste management sector. In: Innovation Strategies in Environmental Science. Elsevier, pp. 255-290

Caroli A, Magarini A, (2015), Food And The Cities: Politiche del cibo per città sostenibili, EDIZIONI AMBIENTE, Milano

Food Policy, Ufficio, and Comune di Milano, (2020), "Milano. Sostenibilità e transizione ambientale." *Equilibri*, Milano

Giorgi S, Lavagna M, Campioli A, Dello A, Dell S, (2017). Cycle Thinking: Fondamenti, Interpretazioni e Analisi del ciclo di vita

Minotti A, Cimini A, D’Amico G, Marino D, Mazzocchi G, (2022), Food Policy Processes in the City of Rome: A Perspective on Policy Integration and Governance Innovation

Steel C, (2020), Sitopia. How food can save the world, C.& Windus Edition

<https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_it#azioni> (last visited 23/06/2022)

<https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/farm-fork_it> (last visited 23/06/2022)

<https://www.ortigenerali.it/> (last visited 23/06/2022)

<https://www.paris.fr/pages/l-agriculture-urbaine-118> (last visited 23/06/2022)

<https://www.pratocircularcity.it/>(last visited 23/06/2022)

<https://www.pratocircularcity.it/minisiti/prato-circular-city/documentazione-tavoli/media7259.php> (last visited 23/06/2022)

**Disclaimer**

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1. https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal\_it#azioni [↑](#footnote-ref-1)
2. https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/farm-fork\_it [↑](#footnote-ref-2)
3. https://www.paris.fr/pages/l-agriculture-urbaine-118 [↑](#footnote-ref-3)
4. https://www.ortigenerali.it/ [↑](#footnote-ref-4)
5. <http://www.pratocircularcity.it> [↑](#footnote-ref-5)